Textile World

VOL. 85, NO. 4 — ESTABLISHED 1868

CONTENTS MARCH, 1935

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MANAGEMENT
What's It All About? (*Editorial*) 75
The Editor Says 76
Letters to the Editor 77
TEXTILE WORLD's Guide to Southern Textile Show 78
New Committee for Textile Planning Formed in NRA 83
50 Years in Textile Industry as Seen by a Publisher 86
Hamilton Goes Stevens—Southbridge Mill Bought by J.P. 91
N.A.W.M. Reelects Besse, Retains Machine Limitations 117
Outerwear's Record Dinner Concludes Convention 117

MERCHANDISING
George Sloan Establishes Textile Merchandising Firm 82
Ten Years of Cotton Textiles 88
Diversification Solves Merchandising Problems for Many Mills. 85
Knee-Length Hosiery Opens New Merchandising Field 95

MATERIALS
American Cotton Is Not Degenerating 88
Use of Standard Batches in Application of Latex 104

MEN
Unemployment Control—Austin T. Levy Proposes Plan 92
Educational Partnership—Experiment in Philadelphia 93
The Personal Page 122
The Overseers' Corner 118

MILL ENGINEERING
Layout Principles Aid to Bleach House Efficiency 102
Engineer's Bulletin Reminds Overseer of Economies 106
New Machinery and Processes 124

METHODS
Over 200 Southern Weavers Cross-Examined 84
Roll Spacing Is Key Setting of Cotton Carding and Spinning 89
Ring-Frame Production—Cotton and Wool Calculations 94
Ratching for Mohair and Other Worsted Mill Methods 96
Whizzing Rayon—Control Needed in Extracting Crepe Yarns .. 97
Spiral Float for Seamless Knitting Machines 98
Designs Inspired by Guatemalan Costumes 98
Camp Blankets—Constructions and Opportunities 99
Should Pool Information on What Makes a Crepe 100
Tale of the Shirt—Fancy Weaves and Woven Colors 107
Three-Carrier System Spurs Call for Direct-Running Yarn 115
Outerwear Show—Survey of Machines and Yarns 116

DEPARTMENTS

The Overseers' Corner 118
Personal Page 122
Questions and Answers 120
New Machinery and Processes 124
New Publications and Business News 126
TEXTILE WORLD Analyst 127
Quotations 142

INDUSTRY BRANCHES

Cotton Digest 128
Wool Digest 130
Rayon Digest 132
Silk Digest 134
Knitting Digest 136
Processing Digest 138
Engineering Digest 140

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9801 WALFORD AVENUE CLEVELAND, OHIO

Textile World

March, 1935

▼

Editor: DOUGLAS G. WOOLF

What's It All About?

OCCASIONALLY, the air needs to be cleared. It does today, in textiles.

We seem to be passing through another crisis or at least a feeling of crisis. Of course, we have had at least two crises a year in textile manufacture ever since this observer came on the scene—but that's not a sufficient answer. Each crisis must be judged on its own merits, or else why have a crisis?

Let's see what this one is all about.

First, as to the condition of business. Cotton manufacturers—to pin this discussion down to cases—are taking a loss on current operations, it is true. But they have been taking losses for eight months. Nothing has changed much in that respect. TEXTILE WORLD's table of manufacturing margins (see the *Analyst*) has changed little in recent months. So that's nothing new to worry about. And the worry we are talking about is brand new: a 1935 model, in fact.

It is also true that demand has dried up for the time being. That's bad. It is equally true that production has been going on merrily: record rayon deliveries in January, for example, and larger cotton consumption in that month than in any month since August 1933. That's worse. Furthermore it is also true that stocks of finished goods have been piling up. That's still worse.

But each and all of these things have happened before without developing quite the sense of crisis in the minds of manufacturers that we find today. Nor was the break in cotton responsible, for this attitude we are discussing started long before that event.

▼

So, again, what is it all about?

Well, we have had a series of coincidental developments which have put fear into the hearts of textile men.

There is the chance of another strike this spring. We can't tell about that. No one can. It depends upon whether or not Gorman can see his way clear to finance a strike just now. Our hunch is that he cannot—and that a *general* strike, at least, is not to be expected before fall, if then. But even if it comes, is that any reason for fear? After the experience of last September, textile manufacturers should approach a clash with Gorman in glad fighting spirit—confident that his sort of warfare can't prevail in a civilized country. *That's* no cause for panic.

Then, there is the minor wave of liquidations. We tried to dispose of them in these columns last month. They were coincidental—and mostly "in the cards" for years irrespective of current business conditions. Of course, individuals connected with firms on the ragged edge worry about their own jobs. Any of us would. But that, again, is not a true crisis.

Finally—and this, we feel, is the new element contributing to a sense of crisis—there is the activity of certain communities which find payrolls passing out and which strive to hold on. No one can blame them. Again to be specific, the Fall River campaign started out in a most constructive way. We think every community should try to "sell" the importance of its industrial life. But, unfortunately, this particular campaign developed into a sectional dispute which, some believed, would split the situation "wide open" and wreck the cotton code.

We do not believe so.

As the editor of a national publication, and as an individual with warm friends among manufacturers North and South, we have not the slightest interest in one section against the other. We have, on the other hand, the deepest interest in the welfare of the industry as a whole.

To that end, we would point out: (1) Any attempt to force the Government to impose the will of a minority upon the majority through forced code revision not desired by the latter is subversive of the whole principle of self-government which the industry is attempting to translate into action. (2) Any real division in the ranks is a traitorous play into the hands of Gorman and his ilk.

▼

Once again, what is it all about?

On the constructive side, there are at least three things which the industry should fight for: (1) Authority to curtail production *immediately* when, as and if needed. (We high-lighted this in the Annual Number.) (2) Exercise of NRA provisions to protect domestic industry against low-cost foreign goods. (See "Japan's Threat" in this issue.) (3) Relief from the processing tax monstrosity.

The next move is the Government's. From the industry's standpoint, an announcement that NRA and AAA were determined to do their share in helping textile manufacturers to help themselves would improve the market situation instantly. From the Government's standpoint, it needs the continued support of the textile industry. NRA has not too many friends just now. It has been able to count constantly on this industry at least. It can't, indefinitely, unless it gives the industry a chance to make a slight profit instead of a loss. (And we say all this, as our friends know, as one in sympathy with the general policies of the Administration.)

So, finally, what's it all about?

Only this: We are not in a crisis. We have merely come to the time to fight.

The Editor Says:

THIS has nothing to do with textiles, specifically, but the passing scene in America during the last few weeks has been stirring: at times tragic, at times hateful, and at times heroic. . . . The death of Justice Holmes, whom we regarded as the greatest American of his time, without exception. . . . The frothing-at-the mouth of Huey Long, whom we regard as the most despicable American of his time. . . . The belated castigation of Long by Senator Robinson, after General Johnson, with his inborn courage, had shown the way. . . . The pitiful spectacle in the Senate where those who had shouted most vehemently against government expenditures voted for the "prevailing wage" amendment to the work relief bill: a dirty political move and a cringe to organized labor.

It takes an optimist to hold fast to his belief in democracy in the face of some of these perverted manifestations of this form of government. But that same optimist can take hope from the thought that only a democracy could have permitted a great man like Justice Holmes to reach the heights he achieved in almost a century of living. His contribution to democracy is only dimly realized today. Always at least a score of years ahead of his time, it will take that many years after his death for the rest of us to begin to catch up to him.

❖

Seeing Washington

WASHINGTON is a different city at the end of two years of the New Deal from what it was in those breath-taking days in the spring of 1933; different, too, from the Washington of a year ago. To us, it is a sadder place. Some of the atmosphere of lofty purpose has gone—and in its place has come an air of dogged determination. The defensive note has crept in for the first time in two years, we feel. And nothing could be more natural. The pitch of March 1933 could not have been maintained; in fact we think its maintenance for as long as it did last constitutes one of the political marvels of history.

We attended a meeting in Washington recently, under the auspices of the National Conference of Business Paper Editors, which included calls on the President, members of the Cabinet, Senators and Representatives, diplomats, bureau chiefs and alphabetical agency heads, and what have you. Our net conclusion was that the New Deal is still an effective political machine, but that its up-keep is more troublesome and more expensive than it was two years ago. . . . The owner of any two-year-old car will tell you that there is nothing surprising in this.

❖

Canada Beat Us to It!

WHILE we've been talking about a central body coordinating the activities of the various textile associations, they've gone ahead and done it in Canada. The Primary Textile Institute has been formed for the "promotion and maintenance of the primary textile industries in Canada—wool, silk, cotton, rayon, in all their branches, by concerted action, and by the interchange of ideas, and by all other proper means." The members of the Institute are the presidents and vice-presidents of the Cotton Institute of Canada, the Canadian Woolen and Knit Goods Manufacturers Association, and the Silk Association of Canada.

Press reports from that country state that it has been felt for some time that a central organization should be established to allow active cooperation among the existing trade associations and to provide for unity of action on matters common to all branches of the textile industry. The creation of the Institute, it is added, will not interfere with the activities of the three associations; these will continue to be concerned with the collection and dissemination of essential statistics, the consideration and solution of divisional problems, and to some extent the direction of public relations policy.

For this country, we repeat:

Eventually—why not now?

❖

The Break in Cotton

QUITE aside from all the discussion of the technical reasons for the break in cotton, one sobering fact projects itself: This sort of thing is inevitable in a market rigged as is the present one. We pretend to no expert knowledge of the technique of that market, but plain common-sense tells us that a price structure which has been created artificially and which is then "supported" by loans against itself, is not the kind of game we'd put our own money on.

The surprise, then, is not that the break came but that it was so long coming. Most shrewd observers whom we know have had their "fingers crossed" expecting just this short of thing. Irrespective of what an investigation proves to have been the cause of the March break, and irrespective of how sharp and how apparently permanent the recovery from it may be, the possibility of a recurrence—and on a grander scale—will be always lurking around the corner.

The obvious answer is that the Government has got to realize this fact. There is one attitude of the Department of Agriculture which worries us tremendously. It is the complete resistance of its officials to the least intimation that anything they may be doing could possibly be wrong. This attitude tends to nullify the very obvious sincerity of purpose prompting that Department. Somehow or other, this inflexibility has got to be changed.

No sensible person—regardless of his opinion of AAA economics—would expect the Government to step out of the cotton picture abruptly. It just can't be done. But any sensible person will expect the Government to make plans for gradually easing out of an untenable position—and to take agriculture and industry into its confidence as those plans develop.

Otherwise, the March break will prove to have been just the first skirmish in a bitter battle with economic laws, the ultimate outcome of which will be defeat for everyone concerned except the laws themselves.

We want to be understood. We don't believe that anything which an interested group cares to label an "economic law" is necessarily one. Nor do we endorse the glib doctrine that "Government should get out of business." Our editorials on the NRA and other phases of the New Deal establish this, we believe. But in this case we are talking about a specific activity: the AAA method of manipulating the cotton market. When it was first outlined, we opposed it. We still consider it fundamentally unsound and consequently believe a careful retreat should be the AAA's marching orders.

To the Editor:

EDITOR, TEXTILE WORLD:

I have read the editorial in the January issue, on Work Assignments, and I thought it was very well expressed. I agree entirely with the editor on this matter, and I think he did a splendid job on this article.

I was interested in some of the subsequent letters on this in the February issue. One of the correspondents, just like a number of others, is confused by the word formula. I agree thoroughly with him that you cannot lay down any definite set of rigid specifications covering the number of units that must be operated, and that each plant should be judged on its particular conditions. I, however, do feel that some system must be found, and formulas worked out to measure labor in-put, and this is the only intelligent yardstick that can be used by the board to determine the correctness of a job, and quoting from this man, he says, "I think your editorial covers this subject very fully except that it did not set forth a definite suggestion and which I think you would have been unwise to have done."

More on Work Assignments

This indicates clearly that the man is worried about something, and that something is how to determine an unfair task.

I think myself that the editor was wise in not making any certain specification, or advocating any definite formulas. I also think such contributions should come from outside of the staff of the TEXTILE WORLD, or any trade paper, but nevertheless the problem remains as to how the board can determine and measure human in-put of energy.

A "SUPER"

It's Carding, Isn't It, Jim?

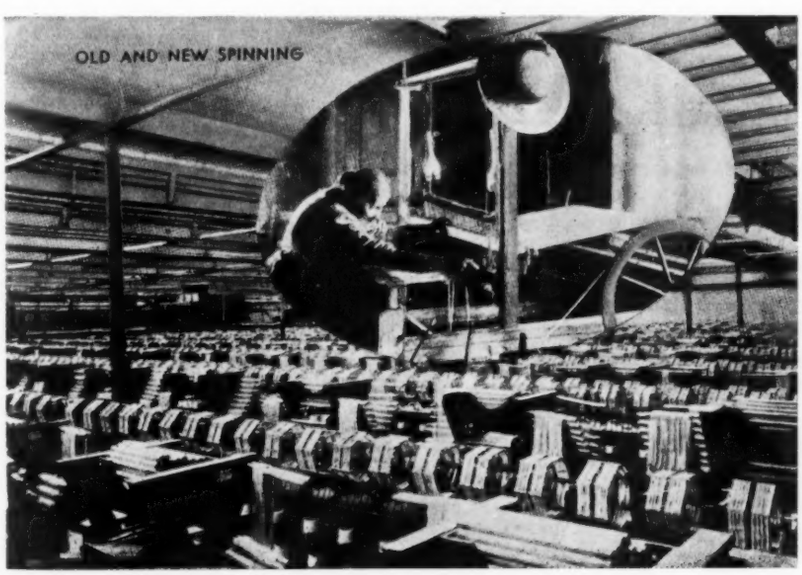
Editor, TEXTILE WORLD:

The attached picture, which I cut out of a recent issue of the *Literary Digest,* was most amusing to me and I think it deserves reproduction and editorial comment in the TEXTILE WORLD.

These two types of "spinning" depicted are, respectively, too old for me to know about in one case, and too forward in the future for me to know about in the other case.

Yours "Spinning Around,"
JAMES W. COX, JR.,
Iselin-Jefferson Co., New York.

[The exhibit referred to by our correspondent is reproduced below.]



A Bunch of Flowers

Editor, TEXTILE WORLD:

Splendid efforts such as yours in the February issue of TEXTILE WORLD, too frequently pass without comment for us to overlook commending you on the very excellent job.

The presentation was grade A in every respect—interesting, accurate and attractive. It should be enthusiastically received by knitted outerwear manufacturers everywhere.

NATIONAL KNITTED OUTERWEAR ASSOCIATION.

•

Editor, TEXTILE WORLD:

May I say here that those of us getting TEXTILE WORLD here, consider it invaluable. I find myself usually looking for mine two weeks before it arrives and then go through it from cover to cover the very day I receive it.

C. W. BENDIGO,
Glen Raven Silk Mills.

•

Editor, TEXTILE WORLD:

The editorial, "The Liquidation Boogey-Man," which appeared in the February issue of TEXTILE WORLD, is perfectly splendid, and I think sounds a note which is timely and helpful to the whole industry.

READER.

•

Editor, TEXTILE WORLD:

I believe that your attitude concerning the Textile Work Assignment Board and the fundamental problems which you enumerate is correct. I think further that your idea of some immediate action on the part of the Board, with the reservation that the fundamental phases of the problem be left for further investigation, is good.

From what we have seen of the members of the Board we agree with you that its members approach the job constructively.

EQUIPMENT MANUFACTURER.

•

"Most Important . . ."

Editor, TEXTILE WORLD:

I consider the matter of the cotton processing tax the most important item in our line of manufacture, or in any plant which does its own spinning, or for plants selling yarns without further process.

This opinion is based on the fact that the processing tax is 4.2c. per lb., and the advance due to direct governmental action is fully 6c.; this advance being due to the Government making loans on the basis of 12c. per lb. on any staple ⅞ in. and longer, low middling grade and better, and in addition limiting production as well as paying the cotton farmer for estimated production on acreage eliminated. This makes the price of cotton so high that it is seriously curtailing consumption of cotton goods.

Loss of foreign trade is another serious handicap to recovery in the cotton textile industry.

C. E. HUTCHISON,
President, American Yarn and Processing Co.

•

Editor, TEXTILE WORLD:

The quickest action that could be taken in my branch which would be constructive, would be a co-ordination of curtailment of production periodically in two branches of the textile industry, known as "The Silk and Rayon Weaving" and the "Rayon Weaving," this action to be taken through the Code Authority so that the entire industry would co-operate in effective action. These branches supply substantially all of the merchandise going into the cutting-up trades. There are periods in the year when overproduction affects the price structure of the market so drastically that it eliminates the reasonable potentialities of an average profit throughout the year. If there were from two to four periodic curtailments of short duration simultaneously effected in these branches of the industry, I think the result would be improved stability.

MANUFACTURER.

TEXTILE WORLD'S Guide to

Southern Textile Show

DETAILED descriptions of the booths at the Eleventh Southern Textile Exposition, Textile Hall, Greenville, S. C., Apr. 8 to13, are given on this and following pages. In the report of each individual exhibit which has been announced to date are a list of the products which the exhibitor has chosen to display, booth numbers, and representatives.

Abbott Machine Co., Wilton, N. H. Booths 212-213. Latest type traveling spindle winder. Rep.: W. G. Abbott, Jr., L. S. Ligon, W. L. Perry, R. E. Hopkins, Bert Zeigler.

Adolff Bobbin Co., Inc., Kearney, N. J. Booth 133. Bobbins, spools, tubes, cops, quills, etc. Featuring fiber card-room bobbins and perforated dye tubes. Rep.: C. F. Dulken, W. E. Mayer, H. E. Kresse.

Aldrich Machine Works, Greenwood, S. C. Booth 250. Specialties for textile mills; Gyrator for cleaning, blending, and distributing cotton manufactured by Lummus Cotton Gin Co., humidifier system manufactured by R. I. Humidifier & Ventilating Co. Rep.: A. P. Aldrich, Jr., A. Aldrich, R. Perry.

Alemite Corp., Division of Stewart-Warner Corp., Chicago. Booth 231. High-pressure lubricating systems and lubricants for textile equipment. Rep.: P. D. Wilson, O. A. L. Keser, A. J. Tilton.

Allis-Chalmers Mfg. Co., Milwaukee, Wis. Booth 132B. Motors, Texrope drives, electrical, and other equipment. Featuring new Seal-Clad textile motor and Texrope drives, and rocking-contact type voltage regulator for maintaining constant voltage for one or more generators in a power plant. Rep.: Wm. Parker, H. S. Roberts.

American Bemberg Corp., New York. Booths 416, 417. Bemberg yarns and fabrics. Featuring Matesa and Superfine yarns. Rep.: W. Schlie, C. C. Bassett, J. Sherrill, H. Z. Heuston, Mrs. Louise Huston.

American Cyanamid & Chemical Corp., New York. Booth 484. Textile chemicals. Rep.: P. F. Haddock, C. H. Scuttle, Jr., H. W. Rose, M. J. Wixson.

American Enka Corp., New York. Booths 403-404. Featuring pre-treated throwing cones.

American Moistening Co., Providence, R. I. Booth 125-A. Complete line of devices for the supply, maintenance, and control of unit humidification. Featuring Amco lap-weight indicator. Rep.: M. McCall, W. L. Burgess, J. D. Johnson, W. L. Johnson, B. A. West, F. J. Orme.

American Wool and Cotton Reporter, Boston. Booth 211. Textile publishers.

Appleton Electric Co., Chicago. Booth 459. Malleable-iron conduit fittings; explosion-proof junction boxes, switches, plugs, and receptacles; dust-tight junction boxes, switches, plugs, and receptacles. Featuring dead-end plugs and receptacles. Rep.: W. H. Jennings.

Armstrong Cork & Insulation Co., Lancaster, Pa. Booth 131. Cork roll coverings and other cork products. Featuring, in operation, improved machine for buffing seamless-cork cots; new machine for assembling ready-glued, seamless-cork cots on rolls. Rep.: W. B. Tucker, T. L. Hill, L. C. Bayless, D. F. Sweeny, D. T. Starkey, H. H. Jordan, F. G. Richards, Jr., J. H. Hayes.

Armstrong Machine Works, Three Rivers, Mich. Booth 120-B. Steam traps. Featuring glass model of the Armstrong steam trap operating on 5-lb. steam pressure, whereby the complete cycle of operation can be clearly seen. Rep.: O. E. Ulrich.

Arnold, Hoffman & Co., Inc., Providence, R. I. Booth 414. Textile chemicals. Rep.: E. M. Johnson, F. W. Johnson, R. E. Buck, Jr., H. T. Buck, P. D. Johnson, C. C. Cobb.

Ashworth Bros., Inc., Charlotte, N. C. Booth 119. Card clothing.

Atlanta Brush Co., Atlanta, Ga. Booths 409, 410. Complete line of textile brushes. Rep.: Geo. B. Snow, Wm. C. Perkins, T. C. Perkins, H. R. Cook.

Bahan Textile Machinery Co., Inc., Greenville, S. C. Booth 125C. Textile parts for automatic looms. Rep.. Wm. H. Bahan, J. C. Williamson, G. E. McMinn, N. M. Neal, P. J. Bahan.

Bahnson Co., Winston-Salem, N. C. Booths 216-218. New open-type H Bahnson Humidifier individual unit; new Bahnson Humiduct, combining ventilation and humidification. Rep.: S. C. Stimson, I. L. Brown, A. Page, F. F. Bahnson, A. H. Bahnson.

Barber-Colman Co., Rockford, Ill. Booths 247, 248. Big-package, automatic spooler, operating at 1,200 yd. per min.; new, electrically operated clutch and brake on warper operating at 900 yd. per min.; new, portable, warp-tying machine; complete line of electrically operated controls for all types of heating, ventilating and air-conditioning systems. Rep.: J. H. Spencer, N. H. Alford, S. R. McElroy, W. B. Anderson, B. A. Peterson, R. E. McClausland, R. G. Ross, F. D. Taylor, C. J. Braatz.

TEXTILE WORLD will maintain headquarters in booth 214 at the Southern Textile Exposition, Greenville, S. C., April 8 to 16. Cordial invitation is extended to visitors to make this booth their business headquarters while in Greenville. Representatives of TEXTILE WORLD'S editorial and business staffs will be in attendance. Visitors' mail, sent to our Greenville office, 1303 Woodside Building, or to our booth, may be picked up at the booth.

Barrett-Cravens Co., Chicago Booth 250-B. Lift trucks and portable elevators. Rep.: E. J. Heimer.

Belger Co., Watertown, Mass. Booth 225-A. Card-room testing equipment; Martin cone. Featuring new long-draft system. Rep.: O. A. Belger, J. A. Butler.

Blackmer Pump Co., Grand Rapids, Mich. Booth 219. Hand and power-driven rotary pumps. Featuring pumps for oils and other viscous liquids. Rep.: B. P. Hetler, W. S. Murphey.

Charles Bond Co., Philadelphia. Booth 480. Check, lug, bumper, harness, hold-up, and jack straps; a variety of pickers, made from Bondaron special-tanned leather; roller skins; Bondaron solid, round-leather belting; flat Bondaron belting. Rep.: J. C. Turner, H. C. Smith, C. C. Bond.

Borne Scrymser Co., New York. Booth 464. Minerol for spraying, Meon for conditioning, and special greases and compounds for mill lubrication. Featuring Breton Minerol process equipment for spraying and conditioning cotton. Rep.: H. L. Siever, Wm. B. Uhler, R. C. Young.

Bowen Hunter Bobbin Co., E. Corinth, Vt. Booth 249. See McLeod Cos.

Bristol Co., Waterbury, Conn. Booth 476. Indicating, recording, and controlling instruments for the textile industry. Rep.: G. H. Gaites, F. A. Faust, H. L. Griggs.

Brugger Winding Co., Philadelphia. Booth 233. Spindleless winder; various types of self-balanced, expanding swifts. Featuring positive and self-centering rotation, smooth start, and automatic stop motion on the winder, and the advantages of the expanding swift. Rep.: A. H. Brugger, Wm. A. Dobler.

B. H. Bunn Co., Chicago, Ill. Booth 466. Featuring new-style, package-tying machine, known as the Manual Cross-Tie, for making a cross-tie on all sizes of cloth bolts, towel bundles, etc., at a high speed, with no change or adjustment. Rep.: H. E. Bunn.

H. W. Butterworth & Sons Co., Philadelphia. Booth 120-A. Textile finishing machinery. Rep.: J. E. Butterworth, H. W. Butterworth, Jr., W. E. H. Bell, J. H. Zahn.

Callaway Mills, LaGrange, Ga. Booth 448. Full line of cotton-duck baskets and trucks. Rep.: C. J. Jones.

Charlotte Mfg. Co., Charlotte, N. C. Booth 101. See Terrell Machine Co.

Clinton Co., Clinton, Ia. Booths 205, 206. Starch products. Rep.: L. Knowles, Sr., L. Knowles, Jr., B. Miller, Geo. E. Corson.

Clipper Belt Lacer Co., Grand Rapids Mich. Booth 221. Clipper belt lacers, hooks or fasteners, cutters and connecting pins. Featuring Clipper speed lacers, made to lace a 6- or 8-in. belt, both ends in 1½ min.; new No. 0 vise lacer. Rep.: P. J. Edwards.

Continental Diamond Fibre Co., Newark, Del. Booth 105. Fiber roving cans, mill trucks, boxes, baskets, etc. Rep.: N. N. Wright, C. L. Simmons, H. M. Simmons.

Corn Products Sales Co., Greenville, S. C. Booth 457. Starch, dextrins, etc. Rep.: C. Watson, W. F. Mueller, R. H. DeWaters, N. Rabold, J. R. White, J. C. Alexander, C. G. Stover, W. R. Joyner, L. H. Kelley.

Cotton, Atlanta. Booth 408. Textile publishers.

Dana S. Courtney Co., Chicopee, Mass. Booth 249. See McLeod Cos.

Crane Co., Chicago. Booths 462, 463. Valves, fittings, and steam specialties used in power and processing work. Featuring new line of plug-disk globe valves for severe duty, line of fittings and valves of corrosion-resistant alloys, and welding fittings. Rep.: W. F. Lahl, P. F. Sackett.

Crocker-Wheeler Elec. Mfg. Co., Ampere, N. J. Booth 120-D. Loom motors, four-frame drive motors, moto-Reducers and flexible couplings. Rep.: Geo. H. Woolley, Jr., J. S. Freeman.

Crompton & Knowles Loom Works, Worcester, Mass. Booth 126. New 75% automatic, 4x1 box, shuttle-changing silk loom; terry-towel loom using 1⅝-in. diameter bobbins and operating at higher speed than formerly; woolen loom of new construction. Rep.: I. H. Verry, R. S. Frost, S. B. Alexander, J. C. Irvin, S. P. V. Desmond, R. M. Deal.

Crouse-Hinds Co., Syracuse, N. Y. Booth 471. Floodlights, plugs, and receptacles; switch boxes; junction boxes; condulets; lighting units. Rep.: C. Hausman, L. P. Spoon, H. L. Guinney, F. C. Smith.

Curtin-Howe Corp., New York. Booth 121. Lumber treated with ZMA (zinc meta arsenite). Featuring lasting qualities and paintability of lumber pressure-treated with ZMA. Rep.: W. E. Norvell.

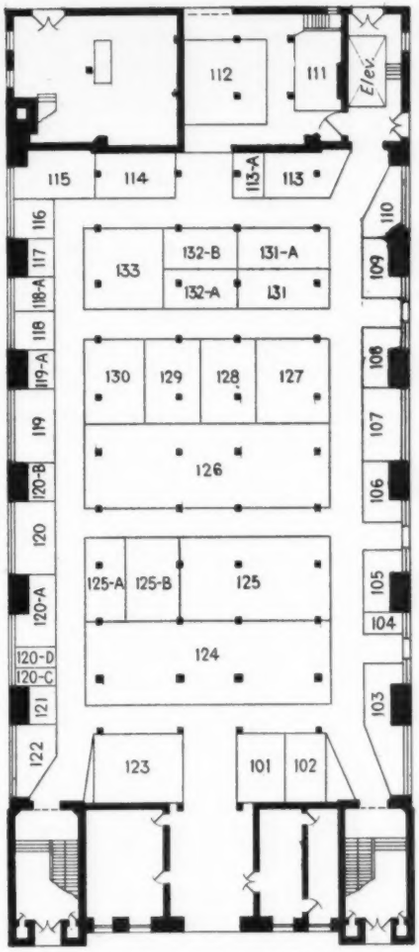
Curtis & Marble Machine Co., Worcester, Mass. Booths 239, 240. Cloth room and finishing machinery. Featuring improved seam-protecting shear.

Denman Tire & Rubber Co., Warren, O. Booth 101. See Terrell Machine Co.

Detroit Stoker Co, Detroit, Mich. Booth 241. Stokers. Rep.: Wm. W. Moore.

Diehl Mfg. Co., Elizabethport, N. J. Booth 230. See Singer Sewing Mach. Co.

Draper Corp., Hopedale, Mass. Booth 124. New Model XK high-speed loom for rayon and fine cottons; new Model XL high-speed loom for broad sheetings; improved X Model and C Model shuttle-changing looms; A1 shuttle-changing loom; E Model print-cloth loom; slasher combs, bunch builder, shuttles, spinning rings, spindles, etc. Rep.: I. N. Darrin, C. H. Draper, Jr., W. M. Mitchell.



First floor, main building, Southern Textile Exposition

E. I. duPont de Nemours & Co., Inc., Atlanta, Ga. Booths 437, 438. Paints, varnishes, enamels and general line of finishing products. Featuring Dulux mill whites, machinery finishes, and mill-village paints. Rep.: W. T. Banning, M. J. Hanger, S. W. Quisenberry, F. H. Aberly, E. J. Zimmer, Jr.

Du Pont Rayon Co., New York. Booth 445. Fabrics and garments of Du Pont rayon. Rep.: F. H. Coker, E. C. Harrington, R. H. Thatcher, H. C. Kennette, E. C. Welling.

Durable Sign Co., Greenville, S. C. Booth 225-E. Lithographed signs. Rep.: J. W. Snell, A. Ramseur.

Eclipse Textile Devices, Inc., Elmira, N. Y. Booth 102. Yarn cleaners, bobbin holders, slub catchers and various samples of random-dyed materials. Featuring new yarn cleaner and improved Eclipse bobbin holder. Rep.: J. C. Ferguson, J. P. Garey, J. D. Lutes, E. J. Brown.

Economy Baler Co., Ann Arbor, Mich. Booth 101. See Terrell Machine Co.

Fafnir Bearing Co, New Britain, Conn. Booth 472. Ball bearings for textile machinery, including bearings alone and complete units for application, standard and specialized designs, heavy-duty bearings for calender stacks, etc. Rep.: C. F. Stanley, H. R. Reynolds, C. A. Berg, A. C. Laughridge, S. D. Berg.

Fairbanks, Morse & Co., Atlanta, Ga. Booth 479. Scales, electric motors and pumps. Featuring dyehouse scale with stainless steel and Monel metal parts, and a recording-dial scale. Rep.: O. O. Lewis, J. M. Spinks, H. E. Graham, E. W. Morgan, T. V. B. Rittenhouse, J. H. Allen.

Fibre Specialty Mfg. Co., Kennett Square, Pa. Booth 478. Line of hard, vulcanized-fiber mill equipment, including seamless roving cans, made of Leatheroid, Standard No-Waste, and Kennett brands; Steel-Klad fiber equipment, Dreadnaught truck, textile basket. Rep.: R. G. Henderson, Geo. B. Scarlett, R. Woods, H. R. Stoops, H. R. Chandler, R. A. Craig.

Finnell System, Inc., Elkhart, Ind. Booth 110. Floor-maintenance equipment. Featuring electric, combination scrubbing-absorbing machine that scrubs and removes dirty water simultaneously. Rep.: R. Finnell, R. L. Phillips.

Flintkote Co., New Orleans, La. Booths 481, 482. Protective coatings for roofs and floorings. Featuring long life of Flintkote static floorings; Flintkote emulsified asphalt for mastic floors. Rep.: L. A. DeBardelaben, W. L. Smith, E. H. Westerfield.

Foster Machine Co., Westfield, Mass. Booth 251-ABD. Winders. Rep.: T. E. Connor, F. P. Brooks, R. W. Ensign, J. Salva, E. P. Dodge.

Foxboro Co., Foxboro, Mass. Booths 424, 426. Indicating, recording, and controlling instruments for temperature, pressure, flow, level, and humidity. Featuring complete Foxboro system of slasher control. Rep.: W. W. Barron, B. B. Peacock, C. E. Sullivan, A. W. Chase.

Gates Rubber Co., Denver, Col. Booth 207. Ropes for multi-V-belt drives; flat, endless, Flexcord belts for high-speed drives; Dubl-V-belts for serpentine drives; card bands, cone belts, evener belts, and loom pickers for textile machinery. Featuring Vulco Ropes on V-flat applications. Rep.: G. R. Morgan, V. G. Brookshire, E. Van Hook, G. D. Richards, D. L. Kessler, D. G. Broadhurst, F. G. Siegrist.

General Electric Co., Schenectady, N. Y. Booth 116, 117. Electrical equipment. Featuring loom motors and control. Rep.: W. W. Cronkhite, F. S. Hartman, W. J. Dorworth, J. E. N. Hume, E. H. Ginn, E. D. McKellar, C. A. Chase, C. T. McLoughlin.

General Electric Co., Incandescent Lamp Dept., Atlanta, Ga. Booth 118-A. Lighting service for textile mills. Rep.: L. M. Grawemeyer, G. H. Harney, W. E. White, G. E. Park, H. M. Horton.

General Electric Vapor Lamp Co., Hoboken, N. J. Booth 115. Cooper Hewitt industrial lighting units and Neon glow lamps. Featuring units combining mercury-vapor and incandescent lamps for a closer approximation of daylight. Rep.: Chas. F. Strebig, D. R. Grandy, C. N. Knapp, F. E. Keener, E. Mauldin.

Gerrard Co., Inc., Chicago, Ill. Booth 244. Wire-tying equipment for bales,

boxes, bundles, cases, and corrugated and fiber containers. Rep.: W. B. Renois, A. Larsen, O. B. Shelton.

Gower Electric Service Co., Greenville, S. C. Booth 111. Automatic stokers; ventilating fans. Rep.: Chas. Gower, R. L. Vaughn, K. Hammond, O. Mills.

Graton & Knight Co., Worcester, Mass. Booths 453, 454. Leather belting, pickers, check straps, belt cement, lace leather and miscellaneous mill leather. Featuring the low-stretch and high-friction factors of research belting, and the new Gold Spot Check Strap. Rep.: H. W. Tuxbury, D. A. Ahlstrand, O. D. Landis, C. C. Anderson, G. A. Barnard.

Grinnell Co., Inc., Providence, R. I. Booth 125B. Pipe hangers; welding fittings, unit heaters, piping and pipe fittings; automatic sprinklers. Rep.: H. P. Conway, S. Chaplin, W. O. Cracy, C. L. Korner.

E. F. Houghton & Co., Philadelphia. Booth 449. Textile chemicals for fulling, scouring, sizing, etc.; Vim Tred leather belting; Sta-put lubricants. Rep.: H. C. Roberts, W. H. Brinkley, W. Andrew, C. L. Elgert, J. E. Davidson, C. B. Kinney, D. O. Wylie, E. R. Holt, J. J. Reilly, J. A. Brittain, B. E. Dodd, J. W. Byrnes.

Howard Bros. Mfg. Co., Worcester, Mass. Booths 242, 243. Card clothing of all varieties. Rep.: H. C. Coley, E. M. Terryberry, G. L. Melchor, G. L. Melchor, Jr.

Huntington & Guerry, Inc., Greenville, S. C. Booth 210. Electrical power and lighting installations for textile mills. Rep.: R. S. Huntington, DuPont Guerry, Jr., J. H. Howard, J. Allen Keller.

Hyatt Roller Bearing Co., Newark, N. J. Booth 120. Roller bearings as applied to looms, preparatory and finishing machinery, and power-transmission equipment. Rep.: H. K. Porter, W. L. Iliff, F. U. Naughton, J. M. Grady, H. M. Carroll.

Hygrolit, Inc., Kearny, N. J. Booth 133. Equipment for chemical conditioning of bobbins, quills, cones and tubes; air-conditioning device; chemicals for conditioning. Rep.: C. F. Dulken, R. A. Quack, H. E. Kresse.

International Nickel Co., Inc., New York. Booths 443, 444. Mill and fabricated forms of Monel Metal, for use in textile plants and dye-houses; Nickel-Clad Steel equipment. Rep.: C. J. Bianowicz, J. E. Nation.

International Salt Co., Richmond, Va. Booth 412. Rock salt dissolver for producing clear brine; various grades of rock salt; evaporated salt. Rep.: A. J. Hulsebosch, R. V. Irwin, S. J. Martin, J. E. Hughes.

Iron Fireman Mfg. Co., Cleveland, Ohio. Booth 475. Iron Fireman heavy-duty power stoker. Featuring complete, automatic operation; steam-pressure, feed-water control and air-volume regulation, all entirely automatic; improved coal distribution. Rep.: J. Fanning, J. F. Baster.

Ivanhoe Division of the Miller Co., Meriden, Conn. Booth 119-A. Lighting fixtures; color testing and matching units.

Jenkins Bros., New York. Booths 441, 442. Bronze, iron, and steel valves for textile plants; mechanical rubber goods, featuring renewable composition disks. Rep.: B. R. Wofford, E. L. Dean, H. E. Foster.

Johns-Manville, New York. Booth 106. Roofing and building materials, industrial insulations, floorings, packings and refractory cements. Featuring home-building materials for mill village construction and modernization, and rot-proof, built-up roofs for dye-houses. Rep.: A. S. Royal.

Johnson Bronze Co., New Castle, Pa. Booth 427. Bronze bushings; bearings; completely machined Universal bronze bars; bronze-graphited bushings and bearings; special textile machine parts of cast bronze, graphited. Rep.: C. H. Leis, P. W. Marceau, I. M. Valentine, Eugene Scanlon.

Keever Starch Co., Columbus, Ohio. Booth 407. Starches for textile use made from corn, wheat, and rice. Rep.: C. J. Kurtz, D. H. Wallace, C. B. Iler, L. J. Castile, F. M. Wallace.

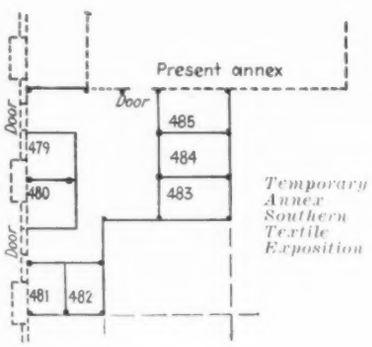
A. C. Lawrence Leather Co., Peabody, Mass. Booths 405, 406. Textile leathers and leather products. Rep.: H. H. Hersey, J. M. Baker, F. R. Kitchell, S. Palmer.

Lestershire Spool & Mfg. Co., Johnson City, N. Y. Booth 202. Vulcanized, fiber-head spools; Chenco products; Pyrex steaming bobbins; Chenco fingers for spinning and twisting machinery. Featuring new tension device for any textile operation, designed to hold tension uniform regardless of yarn speed or changes of yarn speed. Rep.: H. D. Clinton, L. E. Wooten, E. G. Crooks.

Thomas Leyland Machinery Co., Readville, Mass. Booth 430. Cloth expanders, guides, and openers. Rep.: F. T. Walsh, S. A. Mathews, F. H. Martin.

Link-Belt Co., Philadelphia. Booth 220. Silent- and roller-chain drives. Featuring new Tex-Til automatic oiling casing with silent-chain drive, as applied to spinning frames, and the V.R.D. variable-speed gear for fractional horsepower motors. Rep.: J. S. Watson, G. H. Burkholder, H. D. Mitchell, W. J. Nighbert, J. R. Martin, H. Bowman.

Lunkenheimer Co., Cincinnati, Ohio. Booth 450. Bronze, iron, and steel valves; boiler mountings; cocks; lubricators; oil cups; grease cups; engineering specialties. Featuring new N-M-D (non-metallic disk) valves, Alvor constant-level oil control, and Vosta loose-pulley oiler. Rep.: H. A. Burdorf, W. K. Bishop, E. L. Hertenstein.



Marchant Calculating Machine Co., Inc., Oakland, Calif. Booth 251C. Calculating machines featuring new silent speed electric calculator. Rep.: A. E. Bradshaw, A. T. Davis, W. W. Harris, D. R. McAlpine, J. T. McArthur.

Mathieson Alkali Works, Inc., New York. Booths 469, 470. Caustic soda, soda ash, liquid chlorine, bleaching powder, sodium bicarbonate, ammonia, calcium hypochlorite, industrial hypochlorite. Rep.: F. O. Tilson, J. W. Ivey, Z. N. Holler, W. McCain.

McLeod Cos., Greensboro, N. C. Booth 249. Mill Supplies. Featuring Dana S. Courtney high speed bobbins; Bowen-Hunter card room bobbins; Swan-Finch lubricants; Walker Manufacturing Co. steel heddles; Gilmer V belts. Rep.: W. T. McLeod, D. R. Dickson, K. A. Fisher, H. Hunter, E. Bowen, S. T. Packard, J. W. Littlefield, C. Q. Mason.

Merrow Machine Co., Hartford. Conn. Booth 203A. High-speed trimming, overseaming, overedging, plain crochet, and shellstitch machines. Featuring machines for butted seaming. Rep.: E. W. Hollister, R. B. Moreland.

Monroe Calculating Machine Co., Orange, N. J. Booth 225. Adding, listing and bookkeeping machines. Rep.: J. C. Fleming.

New Departure Co., Bristol, Conn. Booth 436. Ball bearings. Featuring new variable-speed power unit and self-sealed ball bearings lubricated for life. Rep.: F. G. Hughes, L. G. Sigourney, F. W. Marschner, R. Brouwer, W. H. Harrington, C. B. Beckwith, J. Collins.

New York & New Jersey Lubricant Co., New York. Booth 109. Non-Fluid Oil lubricants. Featuring mechanical display to show the action of some of the more widely used grades. Rep.: J. H. Bemis, L. W. Thomason, F. L. Thomason, W. C. Taylor, J. A. Sorrells, Jr., F. D. Jacoway.

Norma-Hoffmann Bearings Corp., Stamford, Conn. Booths 451, 452. Ball, roller and thrust bearings; pillow blocks and mountings. Rep.: H. J. Ritter, D. E. Batesole, F. W. Messinger, T. E. Rounds, Jr., E. W. Lawrence.

North American Rayon Corp., New York. Booth 423. Rayon yarns and fabrics.

Otis Elevator Co., New York. Booth 474. Latest type of control for freight elevators. Rep.: J. Horacek, M. A. Meyer, F. G. Merck.

Pacific Lumber Co., New York. Booth 458. Featuring California redwood for mill roofing. Rep.: Geo. Roberts, H. B. Alston.

Parks-Cramer Co., Fitchburg, Mass. Booth 127. Air-conditioning equipment. Featuring ParkSpray humidifiers and the new Airchanger equipment. Rep.: R. S. Parks, P. A. McKittrick, W. B. Hodge, W. H. Burnham, O. G. Culpepper, John F. Porter, H. B. Rogers, J. R. Henderson, E. S. Rothrock.

Parks & Woolson Machine Co., Springfield, Vt. Booth 227. Automatic trimming shear for cotton gray goods, rayons, and silks. Featuring automatic Seamletthru, exhaust cut-out and safety stop. Rep.: W. N. Hadley, P. W. Raiford, F. R. Litchfield.

Penick & Ford Sales Co., Inc., Cedar Rapids, Ia. Booths 439, 440. Cornstarches, dextrins, and gums; corn syrup; corn sugar; corn oil. Rep.: D. P. O'Connor, H. A. Horan, Guy L. Morrison; P. G. Wear, J. H. Almand, C. T. Lassiter, W. J. Kirby.

Permutit Co., New York. Booth 413. Filters and water softeners; automatic valves; feed control units. Featuring new, high-capacity, Greensand base zeolite. Rep.: N. D. Doane, H. H. Morrison.

Phipps & Bird, Inc., Richmond, Va. Booth 225-D. Solution feeders; laboratory apparatus. Rep.: L. C. Bird, R. R. Chappell.

Pomona Pump Co., Pomona, Calif. Booth 208. Water-lubricated turbine pump.

Port Utilities Commission, Charleston, S. C. Booths 431, 432. Data on port facilities. Rep.: H. P. Dew.

Power Transmission Council, New York. Booths 228, 229. Featuring traveling demonstration unit, comparing unit drive with modern group drive, arranged to permit tests of energy consumed and power-factor rating over two consecutive periods representing typical working days. Rep.: A. Kullman, R. E. Walker, Jr.

Powers Regulating Co., Chicago. Booths 431, 432. Automatic temperature controls. Featuring new system of moisture control for slashers, tenters, etc. Rep.: E. R. Foss, W. C. Heckroth, W. E. Gray, J. W. Powers, Frank E. P. Klages.

Rayon & Melliand Textile Monthly, New York. Booths 418, 419. Textile publishers.

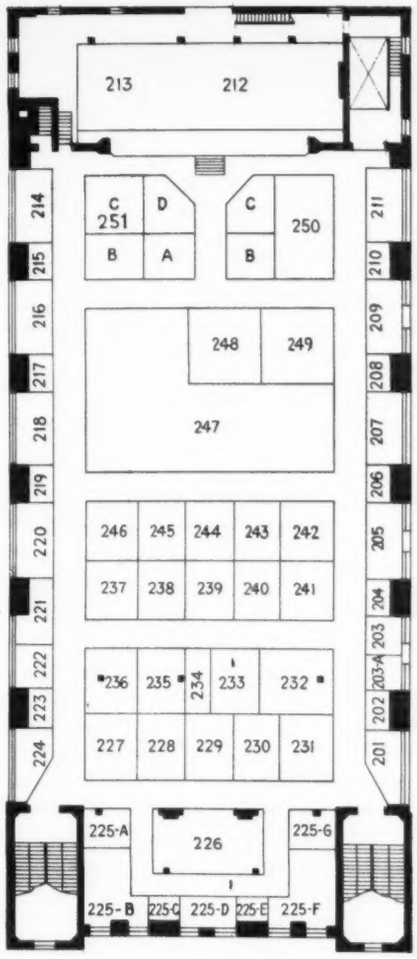
Reeves Pulley Co., Columbus, Ind. Booth 232. Variable-speed transmission. Featuring variable-speed transmission with individual motor drive and hydraulic automatic control, enclosed design with electric remote control; vertical design with individual motor drive; Vari-speed motor pulley; variable-speed spinning-frame drive. Rep.: C. L. Irwin, D. M. McSpadden, J. W. Vaughan, Jr.

Republic Steel Corp., Youngstown, Ohio. Booth 128. Dry can, slasher box, rolling box, and other products made of Enduro Stainless Steel; samples of Toncan Copper Molybdenum Iron sheets and pipe. Featuring skeins of yarn dyed in stainless-steel tanks and in tanks of competitive materials. Rep.: K. D. Mann, C. C. Snyder, G. W. Hinkle, G. R. Irwin, J. W. Minor, C. W. Ruth.

J. E. Rhoads & Sons, Philadelphia. Booths 245, 246. Flat- and round-leather belts, textile leathers and leather packings. Featuring machine to show losses in flat- and V-belt drives, and machine to show capacities of different kinds of flat belting. Rep.: J. E. Rhoads, P. G. Rhoads, C. R. Mitchell, J. W. Mitchell, L. H. Schwoebel, J. T. Hoffman, A. S. Jay, P. F. Klingman.

Rhode Island Warp Stop Equipment Co., Pawtucket, R. I. Booth 130. Loom attachments, drop wires, etc. Rep.: Wm. D. Whittaker, Geo. W. Smith, W. L. Ferguson, W. A. McKinney.

Wm. C. Robinson & Son Co., Baltimore, Md. Booth 104. Industrial lubricants and greases; sulphonated and finishing oils. Featuring new spindle oil designed for high speed spindles. Rep.: R. T. Purkins, B. D. Heath, R. J. Maxwell, B. F. Houston, F. W. Smith.



Second floor, main building, Southern Textile Exposition

Rockwood Manufacturing Co., Indianapolis, Ind. Booths 222-224. Pivoted-motor and V-belt drives; paper pulleys. Featuring spinning-frame and loom drives. Rep.: G. D. Rockwood, W. D. Hamerstadt, B. Y. Brown, S. R. Sayles, J. F. Jenks, R. E. Kiel.

Saco-Lowell Shops, Boston. Booth 226. Preparatory and spinning machinery. Rep.: Messrs. Lowell, Strang, Comer, Davis, Oadle, Graves, Worth, Rowe, Lindsay, and Walsh.

Sarco Co., Inc., New York. Booth 473. Steam traps, temperature regulators, pipe-line strainers, pipe savers, and heating specialties.

Sherwin-Williams Co., Philadelphia. Booth 401. Paint products. Rep.: E. H. Steger, R. B. Olney, J. N. Limbach, W. B. Bell, E. S. Johnson, G. L. Hehl, A. H. Kennedy, R. M. Bennett.

Singer Sewing Machine Co., New York. Booth 230. Sewing machines for piece-end stitching. Electrical equipment, motors, etc., manufactured by Diehl Mfg. Co., a subsidiary. Rep.: J. P. Baiter, H. C. Morehouse, I. F. Webb, C. F. Womack, J. L. Brake, J. C. Lewis, F. B. Williams, P. N. Thorpe.

J. E. Sirrine & Co., Greenville, S. C. Booth 215. Textile engineers.

SKF Industries, Inc., Philadelphia. Booths 467, 468. Ball and roller bearings, pillow blocks and textile spindles. Rep.: B. F. Davis, R. H. DeMott, R. C. Byler, K. F. Thomas, H. A. Fonda, R. W. Franklin, N. Miller.

Sonoco Products Co., Hartsville, S. C. Booth 103. Paper cones, tubes, spools, and other carriers; underclearer rolls and cork cots. Rep.: H. F. Gaffney, W. A. Biggs, P. F. Williams.

Southern Shuttles, Inc., Greenville, S. C. Booth 435. Power-loom shuttles for plain- and hand-threading looms, shuttle-changing looms and automatic bobbin-changing looms. Featuring automatic eye for bobbin-changing looms, tempered dogwood, and specially designed shuttles for the Draper Model X and the Crompton & Knowles Super-Silk looms. Rep.: L. P. Batson, W. J. D. Long, E. E. Simmons, A. B. Mixon, J. Long.

Staley Sales Corp., Decatur, Ill. Booth 415. Textile starches and corn syrup. Rep.: H. P. Dunlap, W. H. Randolph, Jr., G. A. Dean, W. T. Osteen, J. A. Harris, T. L. Smith, R. R. Berry, Jr.

Standard Chemical Products, Inc., Hoboken, N. J. Booth 421. Textile chemicals; testing equipment. Rep.: See Alfred Suter.

Standard Oil Company of New Jersey, Columbia S. C. Booth 113. Lubricants. Rep.: E. H. Collins, C. M. Byers, A. M. Graves, C. E. Motte, D. S. Lewis, J. L. Wright.

Steel Heddle Mfg. Co., Philadelphia. Booth 123. Loom harness and harness accessories, pitch-band and soldered reeds. Featuring electric harness warp-stop motion and new selvage harness in operation, and all-metal cushion reed. Rep.: J. J. Kaufmann, R. J. Freitag, V. C. Hassold, and southern staff.

Stein, Hall & Co., Inc., New York. Booth 209. Starches and starch products. Rep.: I. L. Griffin, J. F. Crawford, R. Gill, W. N. Kline, Jr., T. C. Davis, J. W. Stallings.

Alfred Suter, New York. Booth 420. Testing apparatus. Rep.: G. L. Stanton, L. L. Grombacher, M. Einstein, G. I. Purvis.

Swan-Finch Oil Corp., New York. Booth 249. See McLeod Cos.

C. J. Tagliabue Mfg. Co., Brooklyn. Booths 428, 429. Indicating, recording, temperature-control, pressure, level, and flow instruments. Featuring temperature-time controllers for slasher room, and new temperature recorder-controller. Rep.: V. Wichum, J. S. Pendleton, D. J. Martin.

W. O. & M. W. Talcott, Inc., Providence, R. I. Booth 411. Belt fasteners for leather, rawhide, rubber, woven, and all kinds of belting. Featuring safety-belt fasteners and special fasteners for conveyor belting. Rep.: M. W. Talcott, G. W. Little, L. M. Sheldon.

Taylor Instrument Cos., Rochester, N. Y. Booths 446, 447. Temperature and pressure instruments, flow recorders, temperature controllers, and industrial thermometers. Featuring Fulscope controller with sensitivity adjuster, flow recorders for steam-supply lines, slasher-control system, time-schedule temperature controller for dye vats and cooking kettles, and controllers to regulate level

and temperature in size boxes. Rep.: H. M. Barker, T. C. Hazard.

Terrell Machine Co., Charlotte, N. C. Booth 101. Bobbin strippers; Waltham Pickometers; line of rubberized-fabric pickers, lugs straps, etc., manufactured by Denman Rubber Co.; Economy Baler Co. equipment. Rep.: E. A. Terrell, A. C. Kimbird, W. S. Terrell, J. J. Wilson.

Texas Co., New York. Booths 455, 456. Lubricating products and cotton-conditioning equipment. Rep.: P. H. Baker.

Textile Bulletin, Charlotte, N. C. Booth 204. Textile publishers.

Textile Finishing Machinery Co., Providence, R. I. Booth 114. Finishing equipment. Featuring automatic, ball-bearing tenter with latest types of clips. Rep.: W. Taylor, A. H. Goff, H. G. Mayer, J. Cook.

Textile Specialty Co., Greensboro, N. C. Booth 477. Reeds, combs, shuttle-turning machine. Rep.: L. C. Atkinson, F. A. Decker, F. O. Gibbs.

Textile World, New York. Booth 214. Textile publishers.

Todd Co., Rochester, N. Y. Booth 250C. Office equipment. Featuring hand-operated check writers, payroll machines, check signing machines, etc. Rep.: H. D. Archer, D. E. Woodman.

Toledo Pipe Threading Machine Co., Toledo, O. Booth 485. Hand- and power-operated pipe tools. Rep.: W. R. Vosper, C. E. Hartsing.

Toledo Scale Co., Toledo, O. Booths 460, 461. Weighing and measuring machines. Featuring Toledo Print-weight automatic weight recorder. Rep.: W. M. Randolph, W. F. MacKennon, E. B. Heape.

U. S. Gutta Percha Paint Co., Providence, R. I. Booth 201. Exterior and interior paints and enamels. Rep.: A. S. West, J. S. Palmer, L. K. Palmer, L. M. Hardy.

U. S. Ring Traveler Co., Providence, R. I. Booths 433, 434. Ring travelers of various types for spinning and twisting. Rep.: W. P. Vaughn, O. B. Land, T. L. Maynard.

Universal Winding Co., Boston. Booths 234-236. Winding machinery. Rep.: E. O. Smith, R. Leeson, R. L. Chisholm, R. M. Mauldin, F. Jackson, I. E. Wynne, J. W. Stribling.

Veeder Root, Inc., Hartford, Conn. Booths 107, 108. Counters for textile machines. Featuring improved two-shift resetting pick counter. Rep.: G. H. Anthony, J. H. Chaplin, A. E. Kallinich, E. Howard, R. Bailey, J. Verner.

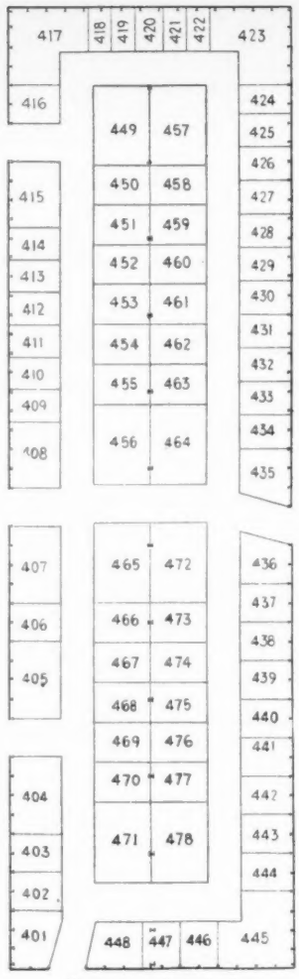
Walker Electrical Co., Atlanta, Ga. Booth 118. Steel boxes, test equipment, panel boards and specialties. Rep.: Messrs. Burnside and Walker.

Walker Mfg. Co., Philadelphia. Booth 249. See McLeod Cos.

Waltham Watch Co., Waltham, Mass. Booth 101. See Terrell Machine Co.

Watson-Williams Mfg. Co., Millbury, Mass. Booth 122. Dogwood, persimmon, and fiber shuttles for automatic bobbin-changing, plain, and shuttle-changing looms; flat steel, bronze-wire and twin-wire heddles; hand and stripper cards; heddle frames. Featuring new cast-iron eye for shuttles, and fiber

(Continued on page 141)



Permanent annex

The news that George Sloan is not going to leave the textile industry is most welcome. It becomes doubly so when it includes the fact that he is going to devote his time to distribution. By now, it is certainly no secret that there lies the real problem.

***The great job that Mr. Sloan has done for the industry in an official capacity is now to be supplemented by one in an individual capacity. We believe he has a remarkable opportunity to translate into personal action the principles he has stood for so valiantly during the last eight years. Moreover, we know he will grasp that opportunity.*—Editor.**

George Sloan

Establishes textile merchandising firm

THE long-awaited answer to the question, "What is George Sloan going to do?" came on March 8 when the former president of the Cotton-Textile Institute announced the formation of a new textile merchandising firm to be known as George A. Sloan & Co., Inc., to engage in the distribution of products of American textile mills in domestic and foreign markets. Mr. Sloan also announced that his firm will serve as the exclusive sales representative of the Amoskeag Mfg. Co., Manchester, N. H., manufacturer of cotton and worsted fabrics, and of the Suncook (N. H.) Mills, manufacturers of rayon and cotton fabrics. Negotiations are under way with other textile mills now distributing their own products with a view of making the new firm a national institution covering all sections and branches.

Mr. Sloan is president of the new firm and D. W. Jarvis, former selling agent for the Amoskeag Mfg. Co., becomes chairman of the board. Headquarters are at 34 Thomas St., New York, and branch offices will be located at Philadelphia, Baltimore, Boston, Detroit, Chicago and San Francisco. In commenting upon his new undertaking, Mr. Sloan stated:

"Having devoted the last eight years very largely to problems related to the manufacture of cotton textiles, I am glad to have this opportunity to give more time to the subject of distribution. Besides, I am happy to throw my lot with the many fine men engaged in this division of the textile business and will look forward to close co-operation with them in their efforts to further the best interests of the industry and general recovery."

The reaction of many textile manufacturers to the news of the formation of the Textile Planning Committee was understandable. "What? Another committee?" was their cry. It is true that the textile industry has been psycho-analyzed often, if not well, during recent months. But that is all the more reason why a new committee, whose job it is to pick up the threads of all these other investigations, is necessary. Furthermore, the new body is not going to "tell the industry how to do anything," according to the accompanying report from our Washington correspondent. Finally, it is headed by a constructive thinker, Arthur Whiteside. All of which convinces this observer, at least, that one more committee, of this particular type, isn't so bad.
—Editor.

New Committee

By Paul Wooton
Washington Correspondent,
TEXTILE WORLD

For textile planning formed in NRA

DIFFICULTIES in the textile industry constitute a challenge to the leaders in the industry and to political leaders. If these difficulties are beyond solution there is something wrong with our economic system. This is the conclusion of Arthur D. Whiteside, member of the new Textile Planning Committee of the NRA. He believes there is enough collective intelligence in industry and in government to solve these difficulties. The reason many of the problems of the textile industry have not been solved, in Mr. Whiteside's opinion, is the fact that studies heretofore made have not gone clear down to the roots of the problem. By going down to their very fundamentals and working up from there, Mr. Whiteside believes corrective measures can be found, and he is convinced that such an organization as the Textile Planning Committee, which has no obligation to produce far-reaching results in six months or a year, is the type of agency that should be employed.

The creation of the Textile Planning Committee is significant in that it is the first of a series of such committees which will be set up to deal with other basic industries. It was thought wise to begin with textiles, as this is an old industry producing a necessity of life, which has been operating under major difficulties for at least 15 years. This covers a period long enough to make a much more thorough study.

Members of the committee are careful to point out that this is not government interference with business. This is no disposition to tell the industry how to do anything. The whole idea is to cooperate with industry on a study that is to be a matter of years. More than that, the study is not to be limited to domestic problems. It will embrace the international problems of the textile industry as well.

Particular care is being taken in formulating the plans for this study, as it is to be an example of what is expected to grow into one of the chief NRA activities of the future, as this type of study enters the fields of more and more industries.

It is recognized that any planning that is done for the future in textiles must take cognizance of new synthetic fibers. There are those who believe that rayon is only the beginning. It is felt that the industry must be prepared to cope with new fibers that will compete directly with cotton and with wool. This is not seen as an immediate development. Research moves slowly, but objectives diligently sought very frequently are attained ultimately.

While an important phase of the committee's work will be the study of decreasing export, Japanese competition, as such, probably will receive only objective attention. It is thoroughly expected that the reasons which now actuate Japan to accumulate exchange and to build up balances in the greatest possible number of countries represent a transitory phase of international relationships. Suggestions for meeting present Japanese competition will be left to other agencies, but it is not unlikely that future conditions might arise where it would be to the advantage of some other textile manufacturing nation to build up foreign credits through subsidizing exports.

In addition to Mr. Whiteside the Textile Planning Committee consists of Sidney Hillman, Leon Henderson, and Prentiss L. Coonley. Neither the Textile Relations Board nor the Department of Labor will be represented on this committee and there is no thought of expanding it at present. It is the intention to keep it strictly an NRA activity. Consideration is to be given the competitive opposition of the various fibers and the code provisions that will iron out any injustices that may now exist.

As this is written, the Cotton Textile Code Authority is meeting in Washington. The current statistics laid before the code authority at this meeting indicated a probable indefinite continuation of production in excess of shipments. So far as the code authority could determine, even the low-cost mills are losing money under present conditions.

Further study in Washington of Japanese competition in textiles has led to the same general belief that textile industries in that country are being subsidized in some secret way as a matter of national policy in building up foreign credits. When full account is taken of the lower labor cost, of the fact that there is no water in stocks of corporations operating Japanese textile mills, and the smart buying of raw materials, the price at which the Japanese are laying down goods in foreign ports is not entirely explained. More than that, Japanese competition, which formerly faced the American industry in foreign markets only, now is being felt in the domestic market.

Typical of the situation is a recent large shipment of high-grade gingham sold, duty paid, in New York at 4c. under the price of a comparable American product. Those studying the situation are at a loss to understand the quoting of prices so far below those of competing American goods. An equal volume of sales probably could have been made at a price 1c. under the price of the American goods. Some think that this indicates a frenzied desire on the part to the Japanese to secure foreign credits and therefore less likely to last.

Over 200 southern weavers

Cross-Examined

LIKE a clever prosecution attorney, Smith Crow, chairman of the Weavers Division, Southern Textile Association, and superintendent of Drayton Mills, Spartanburg, S. C., questioned and cross-examined over 200 weavers at the spring meeting held Feb. 2 at Hotel Franklin, Spartanburg, S. C. An epitome of the more vital facts and figures offered by the members follows:

Slasher speeds and temperatures. Slashers are now being operated successfully according to the following specifications: (1) Warp to go into 64x60s—speed, 34 yd. per min.; temperature large cylinder, 234°F.; temperature small cylinder, 224°F.; temperature size vat, 210°F.; back roll, 450 lb.; second roll, 575 lb.; automatic controls; lease on every warp; moisture in finished yarn, 7½%. (2) Warp (30s) to go into 80 squares—speed, 47 yd. per min.; ends, 4,100; temperature large cylinder, 230°F.; temperature small cylinder, 240°F.; temperature size box, 204 to 205°F.; temperature storage kettle, 180°F.; steam pressure on cylinders, 4 to 5 lb.; size on yarn, 10 to 11%; oil to prevent cylinder corrosion and mildew, 2 oz. to 138 gal. size 10 min. before heating; back roll, 320 lb.; second roll, 409 lb.; moisture in finished yarn, approximately 8%.

Preparation of size. Consistent mixing exactly to formula was asserted to be the secret of good size. Sago starch is often better than corn or potato starch for certain uses. At Balfour (N. C.) Mills, Inc., corn starch is brought to boil in 30 min. and cooked an additional 1 hr., 20 min. At Belton (S. C.) Mills, corn starch is brought to boil in 30 min. and cooked an additional 1 hr. At Oconee Textiles, Inc., Westminster, S. C., sago starch (used on 40s to 12s, 2-ply, 4,300 ends, 15 to 94 ends per inch) is boiled 4 hr. At Monarch Mills, Lockhart, S. C., sago starch (used on 40s) is boiled 1 hr., 45 min. At this plant a run of 1,500,000 yd. print cloth with only 4% seconds was reported.

Effect of tension at slasher. In order to avoid excessive weave-room breaks, it was agreed that yarn should not be stretched at slasher. Stretch is avoided at Balfour Mills, Inc., by means of a device described as a "free-wheeling slasher"—designed to equalize cylinder speeds and eliminate tension. Stretch tests (performed by installing yardage indicator at front and rear of slasher) showed 1¼% stretch at Arkwright Mills, Spartanburg, S. C. Similar tests at Monarch Mills showed 0.94 to 1.2% stretch, occasionally reaching 2%.

Variations in roll size. With reference to squeeze rolls, a few members reported that, upon checking roll diameters with a caliper, a difference of 1/16 to ⅛ in. was noticed—obviously one cause of bad slashing. The cure is to change both rolls at the same time regardless of the fact that only one may be worn.

Loom speeds vs. maintenance costs. A lengthy discussion of the new high-speed automatic looms brought out that it costs less to operate, for example, an X-Model loom at 192 picks than the older models at 160 picks. Balfour Mills, Inc., operating 100% on X-Model looms, saves $60 to $75 per week on its supply and repair bill, despite somewhat increased leather costs. Balfour's technical department believes that loom speed has little effect on breakage, as tests showed that X-Model looms (on 80 squares, 3,134 ends) running at 192 picks averaged only 0.56 loom stops per hour. Concensus was that a loom, to give greatest efficiency, must be operated at all times at the speed for which it is designed. Looms stepped up to meet competition by newer models cost more to operate than is gained by increased production.

Metal-back reeds. Contrary to the common idea that metal-back reeds cannot be repaired satisfactorily, a member asserted that this type of reed can be repaired quickly and easily by any reputable shop.

Shuttles. Bristle linings for shuttles were said to give better results than fur linings when used with coarse yarns below 30s. Bristle does not wear out as quickly as fur. Fewer filling breaks occur when a 7⅜-in. quill is used in an 8-in. shuttle, according to a test run on 40s at Ware Shoals (S. C.) Mfg. Co. Additional clearance (approximately 1¼ in.) is thought responsible for the increased efficiency. It was suggested that jerk-backs may be cut down by use of a thread cutter designed to snip off tail of thread close to bobbin. In connection with this, a wire stretched along race blade should raise thread and result in its being cut closer to the bobbin. A hairless picker was also said to be effective in cutting percentage of pick-backs. With reference to shuttle life, Abbeville (S.C.) Cotton Mills estimates shuttle life to be 22 months when shuttle is used on 36- or 40-in. loom operating 160 picks.

Conditioning filling yarn. Commercial yarn conditioning machines were found to be more popular among the weavers than the older steam conditioning rooms, sprinkler pots. etc. A few reported using plain water to prevent kinks. Most of the members, however, preferred to add a small quantity of oil or some of the prepared compounds to the conditioning solutions to prevent mildew and rusted rings.

Diversification

Solves difficult merchandising problems for many cotton mills

By
Mildred Barnwell
Executive Assistant
Southern Combed Yarn
Spinners' Association

Original design by Mildred Barnwell using mercerized cotton boucle (frill yarn)

TIMES change in manufacturing just as in everything else. The old always gives way to the new. Time was when a cotton spinner with his machinery lined up to spin a million pounds of 36/2 ball warps per season, would run his mill lickety-split, two or three shifts, spinning just that amount and knowing all the time that the market would absorb it. Those days, as every spinner knows, are gone forever. With a shortened work week now, and a possibility of a shorter, neither spinner nor weaver can longer trust to volume production for profit. He must be able to have a larger margin of profit on a small amount of goods in order to come out of the red. And, with this in mind, the alert manufacturer will discover that never before have fashions been so propitious for this change in outlook and output. So, why should he look forward to having "not much fun" when there is good fun to be had?

Cottons are now being promoted for the most discriminating customer. That type purchaser will pay for the privilege of exercising good taste; but, in order to have taste, one must have choice. If the manufacturers are willing to offer cottons, so designed as to combine attractive appearance with a reasonably long life and service, they will reap the rewards of a grateful clientele. Quality and novelty in comparative small poundage will allow more profit in the end than the old-time big volume.

There are on the horizon many examples to prove this, but we will mention only two:

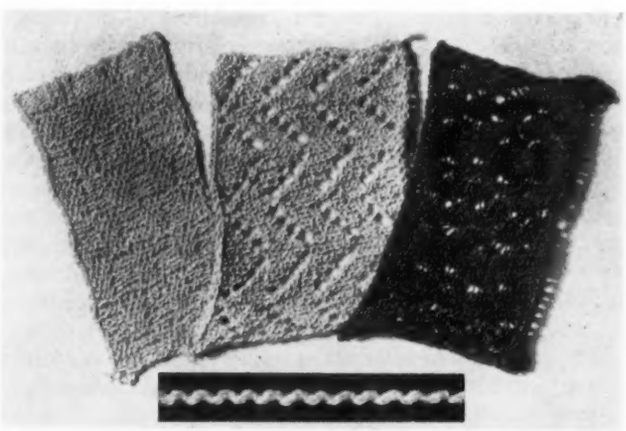
The first is a mill which for years had supplied spool thread to the sewing trade, and it practically ran itself. It did not have to solicit business; its output was pledged and its customers took all and begged for more. After a few hard years, the mill was running half its total number of spindles and on one shift at that. A suggestion that they try a novelty knitting yarn for both hand-knit and machine-made garments was offered. The idea was unenthusiastically met, but toyed with and not forgotten; eventually it was tried. A new type of mercerized cotton frill was made, put up in two-ounce hanks, and submitted to the public in a small way. Its success was instantaneous. All the ladies wielding knitting needles swore it was just what they had wanted all their lives, and this was followed by enthusiastic inquiries from the machine knitters. At the present time, with a minimum amount of advertising, the mill promises a real come-back, by diversifying its out-put, using the thread business as a backlog and satisfactorily marketing at a nice profit its novelty knitting yarns.

The second mill, in better days, ate up about 1,000 bales of cotton a week, but now is limiting its consumption to about 80 bales. "But," said the executive manager, "why should I sweat blood to run the whole plant at a loss when by changing our product into a novelty output of variated weaves I can make a real profit? Give the customer what he wants, and you will always have a customer."

Certainly these manufacturers are to be congratulated upon their sagacity!

Let the manufacturer remember he can always depend upon the ladies. The dear things will save and stint and economize at every turn if conditions warrant, but eventually they become restless and regardless of consequences they will have their fling. Thus, it was found that despite the economic tendency toward the leveling of incomes, the 1934-35 winter mode brought an elegance, luxury and opulence such as we have not seen in years. Spring 1935 is following through in a lighter, gayer, and more animated vein.

However, ladies who enjoyed the luxury of stiffened velvets and lamés do not plan to skip enthusiastically into something less interesting. With Paris giving cottons prestige and background, with the consuming public yearning for rare and unusual weaves combined with cotton's practical nature, won't the manufacturers see the enticing and alluring possibilities before them?



Three samples of hand-knit materials of mercerized cotton yarns (about half true size), and, below, sample of frill yarn somewhat enlarged.

Fifty Years

In the textile industry as seen by a textile publisher

EXCEPT for the history of TEXTILE WORLD and how it came into being, I do not flatter myself that its readers are especially interested in my 50 years of textile publishing, completed in March of this year, but a golden anniversary always seems to be an excuse for the survivor to talk about himself and how different things are today from what they were 50 years ago.

I little thought when I went to work in 1884 for the newly formed firm of Wade & Miller, wool brokers, to learn the wool business, that within a few months I was to become a textile publisher and continue in that business uninterruptedly for 50 years. It happened this way: Charles Miller, an old friend of mine, who had made and lost three fortunes in wool and copper, wanted to try wool again. At that time, the Boston *Journal of Commerce* was the leading industrial paper in New England. It had a textile department and Thomas Pray was chief editor and had immediate charge of the cotton section; Fred Low, now editor emeritus of *Power,* was the associate editor in charge of the power department, and Joseph M. Wade was editor of the wool section. Wade was a practical man who had risen from the ranks to be manager of a large mill. Pray died and Wade wanted to be chief editor, but Low was appointed. Wade was disgruntled and quit and with Miller formed the wool brokerage concern of which I was the sole staff. If Wade had been appointed chief editor my story would have been different.

I never had a chance to master the wool business, for within a few months Wade, who was a natural-born writer, proposed that the firm should start a little textile paper devoted to practical mill matters, and the first issue of Wade's *Fibre and Fabric* appeared in March 1885. Wade was editor; Miller tried to sell advertising; I kept the books and subscription list, read the exchanges, addressed the wrappers, helped mail the paper when it came out once a week and took the sacks in a cab to the post office.

In a few months the money gave out and the printers declined to do any more printing. Miller was discouraged and quit and Wade offered me one-half interest in the business if I could raise enough money to pay the printers' bills and a few other debts. I was only a boy, still in my teens, and the idea of becoming half-owner of a publishing business seemed to be a marvelous opportunity. I raised the money somehow and for two years Wade and I struggled along together. My first office boy was George W. Coleman, now president of the Babson Institute, whom I picked out of the graduating class of the English High School in Boston.

Mr. Wade was 40 years older than I and quite crotchety at times—at least I thought so. We had many differences of opinion and the crisis came in October, 1887, when it became apparent that we could not work together, and I named a price at which I would either buy him out or sell. He bought. The next month I formed the firm of Guild & Lord with Walter B. Guild, who had been an advertising salesman, and in January 1888 the first issue of TEXTILE WORLD appeared as a big four-page sheet, nine columns to the sheet. In 1895 I bought out Mr. Guild and purchased another textile paper called the *Industrial Record,* which had been started in 1866, and combined it with TEXTILE WORLD.

In 1903 I became associated with Frank L. Nagle who had been connected with the *Textile Record,* Philadelphia, since 1880. We formed the Lord & Nagle Co. and combined the two papers under the name *Textile World Record.* Mr. Nagle is still active in the business and has more than 50 years to his credit.

In 1915, a merger with *Textile Manufacturers Journal,* which had been started by Joseph H. Bragdon in 1894, took place, and the name was changed to *Textile World Journal* and some years later once more to TEXTILE WORLD.

About the time I was starting with *Fibre and Fabric,* a young school teacher from up New York State, James H. McGraw, had gone to New York, and with two friends, H. M. Swetland and E. P. Harris, had started *Power, The Street Railway Journal* (now *Transit Journal*), and a railway equipment paper, the name of which I have forgotten. My friendship with Mr. McGraw began at that time and has continued ever since, so that when TEXTILE WORLD joined McGraw-Hill in 1928, two old business friends, who had many similar publishing views, became associated in a very congenial connection.

The modern development of the textile industry in the United States has occurred in my life-time. The major processes—carding, spinning, weaving and finishing—were substantially the same when I went into the business as they had been for a century or more previously. Vegetable dyes were used. There were a few aniline colors, but it was not until some years later that synthetic indigo and other synthetic dyes made their appearance. Madder, logwood and fustic were generally employed and every dyer had his own methods and secrets which he kept to himself as stock in trade.

The revolving flat card was just coming into use. The first issue of TEXTILE WORLD described the first revolving card built in the United States by the Lowell Machine Shop. Mule spinning was generally used but ring spinning was fast coming into greater use, through the development of the Rabbeth spindle by George Draper & Sons. Drawing-in in the cotton mill was all done by hand. There were no automatic looms.

In the woolen division, L. J. Knowles & Bros. had just brought out the open-shed loom and there was the keenest competition between that and the closed-shed loom of the Crompton Loom Works. These two companies were afterwards merged. The development of the rotary press for woolen goods in the 80's aroused bitter controversy as to its merits compared with the old method of plate pressing.

The automatic cotton loom was a revolutionary de-

By Henry G. Lord
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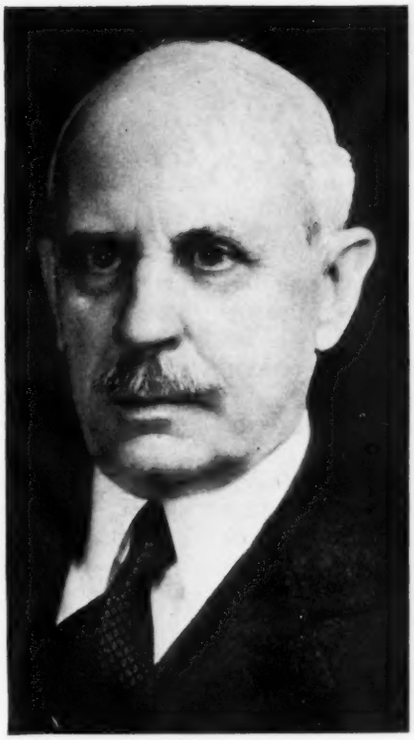

velopment. It was the most carefully planned machinery promotion that I recall, and involved a tremendous investment before a loom was sold. The Drapers had never been identified with the weaving branch of the industry and they realized that such a revolutionary machine as the automatic loom must have the most convincing evidence of practical success under mill conditions in a large way. After having proved the success of this machine to their own satisfaction —with a section of 80 to 100 looms running regularly for a long time in their own shop in Hopedale—they built and equipped a mill in Burlington, Vt., somewhat remote from cotton mill districts in New England, where the automatic loom would have a thorough test and opportunity for practical demonstration as to its profit-making ability. It was an enormous success after the first few years.

It was about this time that the southern mill development began. When I first went into the business, there were very few cotton mills in the South—only a few survivors of the ante-bellum days. A few far-sighted New England manufacturers were establishing mills in northern Alabama and Georgia but there was grave doubt and much argument as to the wisdom of establishing these southern plants of the Dwight, Massachusetts, Merrimac and Indian Head Mills. The wisdom of this move, of course, has been amply demonstrated. In the early 90's a southern boom occurred comparable to the Florida boom of 1925. Almost every southern city and town was bidding for cotton mills, and many were built. Development of the Piedmont Section was well under way. New England, as well as the South, was expanding rapidly in cotton manufacturing, but it reached its peak in 1926. Meanwhile the South had long since outnumbered it in spindleage.

In the early 80's there were far more wool manufacturing mills than there are today. As I recall it, there were over 3,000 woolen mills compared with 736 mills (including worsted) reported by the last census. All through New England, New York, Pennsylvania and the Central West there were small woolen mills, principally operated by water power and furnishing the major source of employment to inhabitants of the town. Few of them were larger than ten sets. There was no worsted machinery until a little later. The tariff was the bulwark of protection to the wool industry and for years was the major subject of controversy. When the tariff was high, the mills prospered; when the tariff was low, their business declined. The worsted business was established through high tariff protection.

The formation of the American Woolen Company in 1899, promoted by William Wood, brought together 25 or more important woolen and worsted mills. It was freely predicted that many other similar consolidations would follow, but although there were several on a small scale, the industry on the whole remained highly individualistic. Gradually some of the smaller woolen mills dropped out in a competitive struggle, due chiefly to changes in local conditions or inability to keep their equipment up to modern standards.

The hosiery and underwear knitting industry was largely centered in New York State, New Hampshire, Connecticut and Pennsylvania and used far more wool than cotton. Many knitting mills had their own wool spinning plants and much mixed or merino yarn was spun on the woolen system. It was not until the invention of the seamless hosiery machine that the big development of the knitting industry occurred. Branson, Robert Scott, Louis Williams, Charles Cooper, Crane, Lawson, Hemphill, Higginbotham and Pepper are some of the names that occur to me as pioneers in the development of modern knitting machinery. Silk was an infant industry in the 80's and, of course, rayon was unheard of.

The standard hours of labor were 60 hours per week. I do not think there were legal restrictions on hours and often country mills would run 11 and even 12 hours a day. The only union that I remember was the cotton mule spinners union which was ably lead at that time by a man named Robert Howard.

The consumption of wool per capita was far greater then than it is today. People wore heavier clothing. The average weight of men's winter wear was 16 oz. and the chinchilla, beaver, melton and kersey overcoatings were of very heavy weight. Underwear was also largely of wool. The major part of the wool clip came from the Central States, but the use of territory wool was increasing rapidly with Australian wools being used for the constantly finer goods made in this country and supplanting the foreign imported product.

Most wool cards were 40-in. wide with wood frames. The Bramwell and Apperly feeders had been introduced, but hand-feeding was customary. Wool spinning was done on mules or hand jacks. Ring spinning for wool is a comparatively recent development in which the cotton machinery house of Whitin were pioneers. The automatic loom for wool came much later than for cotton. Davis & Furber were developing the 48 in. card with steel frame; James Smith Wool Machinery Co. was introducing the wide 60 in. card; Proctor & Schwartz were developing new types of drying machinery; and Butterworth new types of finishing equipment. I have just mentioned a few things that come to mind. If I would attempt to even name the new machinery developments and the firms responsible for them, it would make a book, but the pages of TEXTILE WORLD have kept the record of this great mechanical era. Nothing arouses my ire more than to hear the textile industry sometimes referred to as "backward."

Most of the leaders of the industry of those days have passed on, but the companies and *(Continued on page 126)*

Survey shows that American cotton is

Not Degenerating

DOMESTIC cotton raised and ginned in 1934 is superior in quality—particularly in tensile strength—to cotton produced in 1933 and 1932, and is considerably superior to cotton produced in 1931. This is the conclusion reached by TEXTILE WORLD after making inquiries among representative cotton mills.

During the last year, rumors kept floating about to the effect that two out of the last three cotton crops (1931-33) had been of inferior quality; i.e., of low tensile strength, brittle and irregular fiber, excessive percentage of waste, poor spinnability, etc. As the 1934 crop began to find its way into the mills, boss spinners and weavers at technical meetings and elsewhere anxiously asked each other such questions as, "Will the 1934 crop be another poor one? Do bad crops run in cycles; if so, are the cycles getting closer together? Is American cotton gradually degenerating?"

Findings Regarding Recent Crops

Following is a summary of our findings with respect to the "good and bad crops" of recent years:

1. Crop of 1934 is superior in every respect to three preceding crops. It has been suggested that this improvement in quality may be the result of more intensive cultivation instigated by acreage curtailment. While generally considered excellent, 1934 cotton, in some instances, is reported to possess uneven drawing qualities, which may be caused by variation in diameter of individual fibers. Such irregularities would naturally cause variations in the number of fibers composing a given diameter of roving.

2. Crop of 1932 ranked in quality next to that of 1934, being much better than either the 1933 or 1931 crops. This fact disputes the contention that stinted use of fertilizer during the depression caused bad crops. It is now history that economic conditions in 1932 were somewhat worse than in 1931—yet the 1931 crop was the poorest of the four discussed in this article.

3. Weather conditions were also mentioned as a possible factor in fiber quality. Just how important this factor was cannot be accurately determined, as weather during the years 1931-32-33 was more or less average—yet each crop showed decided differences in quality. To make the weather angle completely uncertain, the year 1934—the year of the devastating western drought and the unusual extremes of temperature—produced the best quality cotton of all. However, it has been reported that 1934 cotton grown in or near the drought areas did suffer some loss of character and length of staple.

TEN YEARS OF COTTON TEXTILES

Data assembled by The Association of Cotton Textile Merchants of New York from Bureau of The Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for the non-census or even years has been estimated to correspond to spindle hour activity during the preceding census years.

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
EQUIPMENT											
Spindles in place at beginning of year	37,939,772	37,871,936	37,364,730	36,465,976	35,267,086	34,541,486	33,608,494	32,326,526	31,442,174	30,938,340	30,889,484
Increase or decrease from preceding year	319,448	67,836	507,206	898,754	1,198,890	725,600	932,992	1,281,968	884,352	503,834	48,856
New installation, additions and replacements	343,292	217,264	496,192	255,912	320,784	251,936	205,068	143,908	348,568	529,840	
OPERATION											
Spindles active at any time during year ending July 31st	35,032,246	34,750,266	34,409,910	33,569,792	32,417,036	31,245,078	28,979,646	27,271,938	26,894,860	27,742,462	
Spindles idle during same period	2,907,526	3,121,670	2,954,820	2,896,184	2,850,050	3,296,408	4,628,848	5,054,588	4,547,314	3,195,878	
Average number of active spindles based on twelve monthly reports	32,642,076	32,352,262	32,547,119	29,961,648	30,408,548	27,269,470	25,674,107	23,250,757	24,873,270	25,119,435	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	2,390,170	2,398,004	1,862,791	3,608,144	2,008,488	3,975,608	3,305,539	4,021,181	2,021,590	2,623,027	
Percentage relation of average active spindles to spindles in place	86.04%	85.43%	87.11%	82.16%	86.22%	78.95%	76.39%	71.92%	79.11%	81.19%	
Spindle hours run	94,600,127,795	97,028,629,898	104,450,215,778	92,728,880,678	99,899,724,476	76,702,655,168	77,793,298,853	70,218,347,911	86,580,232,828	75,711,412,882	
Hours run per average active spindle	2,898	2,999	3,209	3,095	3,285	2,813	3,030	3,020	3,481	3,014	
MARKET											
Production in square yards	7,741,568,000	7,936,942,000	8,980,415,000	7,972,551,000	8,541,546,000	6,558,154,000	7,140,653,000	6,445,342,000	8,103,717,000	7,086,437,000	
Exports in square yards	543,317,000	513,299,000	565,021,000	546,847,000	564,444,000	416,285,000	366,959,000	375,446,000	302,042,000	226,306,000	
Imports in square yards	109,249,000	60,680,000	63,002,000	61,295,000	61,185,000	35,517,000	34,732,000	29,436,000	41,348,000	41,533,000	
Available for domestic consumption	7,307,500,000	7,484,323,000	8,478,396,000	7,486,999,000	8,038,287,000	6,177,386,000	6,808,426,000	6,099,332,000	7,843,023,000	6,901,664,000	
Population at July 1st	114,867,000	116,483,000	118,197,000	119,798,000	121,526,000	123,191,000	124,070,000	124,822,000	125,693,000	126,425,000	
Per capita consumption in square yards	63.62	64.25	71.73	62.50	66.14	50.14	54.88	48.86	62.40	54.59	

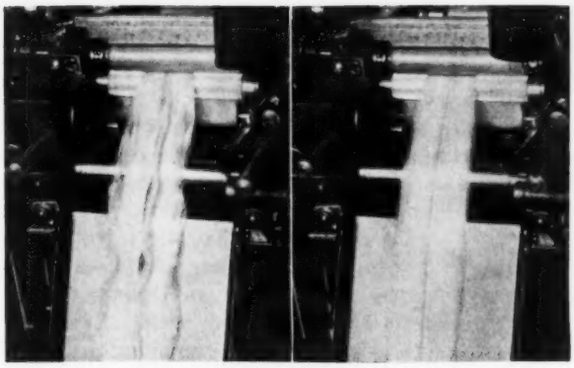

Fig. 1. Rolls set too close. Fig. 2. Rolls correctly set.

Roll Spacing

Is key setting of cotton card and spinning rooms

By K. B. Cook
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CORRECT roller settings for different staples of cotton are one of the many problems the cotton spinner has to contend with. In the spinning room the matter is comparatively simple, as cockled yarn appears the moment the rollers are set too close, and weak and uneven yarn when they are set too wide. Very often the forward setting of the top roll on a spinning frame by but $\frac{1}{32}$ in. stops the cockling. Sometimes one hank size of roving runs well with certain roller settings, whereas the same staple of cotton in a different hank size will cockle. This indicates that not only the staple length of the cotton itself but also the hank size of the roving and the amount and distribution of draft have a decided influence upon the spinning of yarn with maximum breaking strength and evenness.

While correct roller settings on the spinning frame can be approximated by watching for cockled or cut fiber and unevenness as the yarn is delivered from the front roll onto the bobbin, it is not quite so simple to determine correct roller settings on the drawing frames or combers, where a much larger mass of fibers is being drafted—and so on through slubbers, intermediates, roving frames, and jack frames.

Since the automatic roving tester was introduced as a positive method for ascertaining the correct amount of twist in roving and a guidance for the correct adjustment of tension on roving frames, the correct roller settings were still left a matter of conjecture. Drafting with proper settings is the key process in the whole art of cotton spinning.

When we heard that a machine had been invented which would tell us the exact roller settings for different staples of cotton, weights of slivers, and hank sizes of roving, we approached the invention rather cautiously but with an open mind. We were "from Missouri," but after a demonstration of the roll-spacing determinator, as this apparatus is called, we purchased two, one for our southern mill and one for our New England mill. We do not intend to write here about the mechanical features of the machine, as it has been described in a previous issue of TEXTILE WORLD (October, 1932).

Skillful Operation a Factor

Inasmuch as the operation of the determinator requires considerable skill and judgment in order to get the most out of it, we found that it is desirable to assign a high-class man to operate it and perform all tests. In the hands of the right man, a vast amount of information can be obtained from it. In making tests, our experience indicates that the machine should first be set to duplicate all fixed factors of the machines in production. Thus, the rollers are weighted in the same proportion as those in the mill, the drafts are set the same, and the roller settings are duplicated. Tests are run; and as the product delivers over a long black chute in front of the machine, results are carefully noted. Then variations in weights, drafts, and settings are introduced one at a time and observations listed on a test form. When the best combination has been determined, results are applied to the mill machinery.

The so-called "brains" of the machine are located between the front and second roll, where, by means of a tension-lever device, the exact roll spacing is mechanically determined and checked by an optical, electrically lighted device. When this lever or blade is lifted up against the fibers, they are subjected to a sudden retardation; and if the rolls are set too close for the staple length and weight of sliver, the sliver delivered down the black chute will appear wavy, as illustrated in Fig. 1. Certain handles are now turned to alter the roller settings and the tension lever is raised and dropped until the correct settings produce a perfectly smooth and even sliver free from waves, as illustrated in Fig. 2.

The first few tests made showed to our surprise that with slightly changed break, intermediate, and total drafts on our drawing frames, a much evenner sliver could be made. We then went further and changed the roller settings in accordance with best results attained on the machine after many trial tests. All these changes resulted in more uniform slivers, rovings, and yarns, which in turn quite naturally increased breaking strengths, resulting in further economies in subsequent operations.

Perhaps one of the most surprising results came to light when testing sliver from a certain type comber. The general characteristics of this particular machine are such that the piecings are weak and imperfectly overlapped. Slivers taken from the comber table were run through the machine set at standard mill settings; and practically every piecing showed very prominently, producing a distinct sausage appearance. Of course, after doubling and drafting in the draw box, this condition would to a certain extent be improved. It was found, however, by reducing all roller settings $\frac{1}{16}$ in. and reducing the break draft from 1.30 to 1.10, intermediate draft from 2.00 to 1.25, and keeping the total draft at 6.0, that a very large part of this unevenness disappeared. Single 40s yarn spun from this improved sliver over a test period of two weeks gave an average corrected breaking strength of 51.1 lb., as compared with a strength of 48.2 lb. on regular work, or an increase of 6.0%. The accompanying table shows some of the com-

TESTS ON COTTON COMBER

Trial Test No.	Roll Settings*			Drafts			Results
	1st-2nd	2nd-3rd	3rd-4th	Break	Inter.†	Total	
1	1-5	1-7	1-9	1.30	2.0	6.0	Regular settings show piecings badly
2	1-4	1-6	1-8	"	"	"	Show piecings but not quite so badly
3	1-3	1-5	1-7	"	"	"	Cockles yarn. Too close
4	1-6	1-8	1-10	"	"	"	Show piecings badly
5	1-7	1-9	1-11	"	"	"	Very uneven
6	1-4	1-6	1-8	1.30	1.5	6.0	Slightly better than Test No. 2
7	1-4	1-6	1-8	1.2	1.5	6.0	Slightly better than Test No. 6
8	1-4	1-6	1-8	1.1	1.25	6.0	More even than any other trial test. Use for experiment

*Right-hand numbers represent sixteenth inches.
†Intermediate draft figured from 4th roll to 2nd roll (next to front).
Note: Changes in weights on rolls did not affect evenness or appearance favorably.

binations tried in this particular test, with observations. The point to be emphasized here is that to perform a similar test on a comber in the mill would require several hours, due to the mechanical construction of the machine; and the chances are that if tried once with no noticeable results, no further changes would be attempted and the mill would accept the uneven work as a necessary evil.

This machine is also invaluable for testing new types of cotton. In introducing a new cotton into the mill, complete settings and drafts to produce the maximum in strength and evenness from the drawing frame through the spinning can be pre-determined in a few hours. Some mill men might say that for the same cotton different settings and drafts work equally well, but we have come to the conclusion that this is not so and that there is but one correct setting of the drafting rollers and but one correct combination of drafts to achieve the maximum in quality.

Our experience with this machine has indicated that there is a distinct tendency among carders and spinners to set rolls too wide, probably because they believe they will run into less trouble with a wide setting than with a close one. Assuming, however, that the cotton furnished a mill is of fairly uniform staple length, we believe it safe to say that many mills could close up considerably on their roll settings, with the resultant effect of producing a stronger and more uniform yarn. *(Later Mr. Cook will discuss roving testing.)*

Japan's Threat . . .

Gaining foothold in domestic cotton goods market

◆ *The following statement was prepared by W. Ray Bell, president of the Association of Cotton Textile Merchants of New York, for the information of his members:*

RAPID extension of the Japanese foothold in our domestic markets for cotton goods is indicated in the following records of the Department of Commerce, recently made public:

United States Imports of Cotton Cloth from Japan
(In square yards)

	Total	Bleached piece goods	Printed, dyed and colored
1934	7,287,000	6,044,000	1,243,000
1933	1,116,000	257,000	859,000
1932	789,000	51,000	738,000
1931	770,000	100,000	670,000
1930	1,016,000	48,000	967,000
1929	1,217,000	176,000	1,038,000

The progressively increasing volume of these imports is better shown by a comparison of the monthly figures for 1934:

(In square yards)

	Total	Bleached piece goods	Printed, dyed and colored
Jan	30,378	3,960	26,418
Feb	86,458	72,529	13,929
March	333,535	266,215	67,320
April	537,342	482,056	55,286
May	823,932	641,681	182,251
June	312,173	179,948	132,225
July	386,543	295,603	90,940
Aug	388,672	332,360	56,312
Sept	683,302	589,432	93,870
Oct	567,014	372,311	194,703
Nov	927,343	812,507	114,836
Dec	2,210,325	1,995,243	215,082

December, 1934, imports from Japan equal the total yardage of any two previous 12-month periods and are only slightly less than the gross total from that country for three preceding years of 1931, 1932, 1933.

Price has been the controlling factor in establishing this condition, since qualities, patterns and colors of domestic goods have in many cases been duplicated. With landed prices for the Japanese products 20 to 30% under the domestic market, already highly competitive, there is no practical way for our industry, under current regulations, to compete on a price basis. Our higher standards of living mean labor costs ten times higher under the code and shorter hours of operation. To preserve employment opportunities under American standards, it is vital that the impending flood of Japanese cotton goods into domestic consumption channels be promptly diverted and cost-equalization established.

Confronted with a similar situation some months ago, Great Britain was quick to establish quotas for her various colonies and thus preserve the markets essential to prevent the scrapping of her factories and large increases in her unemployed. According to Arno S. Pearse, a noted British authority, "Japan produces cheaper than any other country, and the difference in price is so marked (from 25 to 50%) that the European industrialist has in many cases given up hope of overcoming it." We are now more vulnerable than any of the European countries and our tariff walls are no longer effective in equalizing the different standards of life.

The influence of greatly increased domestic costs, under the N.R.A. and consequent higher prices in our cotton goods markets, has been an easy stimulant to the Japanese drive for American business, coupled with the protective limitations adopted in many formerly important world-markets where the doors are now barred to them. It is not our habit to be alarmists, but we are convinced that these developments present a serious threat to the well-being of our industry and all connected with it, as well as to the highest public interest. We believe that prompt governmental action is necessary to cope with the situation which is growing progressively worse.

Hamilton Goes Stevens

Liquidation of Southbridge Company achieved by sale as unit to J. P. Stevens interests

HAMILTON WOOLEN CO., Southbridge, Mass., whose stockholders voted to liquidate when it became apparent that labor discord had rendered stable operation of the plant impossible, has been sold as a unit to interests allied with J. P. Stevens & Co., New York. The Stevens interests spread wide and far not only in wool but also in cotton textile mills. They have been notable in expanding their allied businesses during the period of the depression.

The Hamilton purchase, announced Feb. 12, covering inventory, machinery and buildings, will give the J. P. Stevens interests an outlet for their yarn mills, which have been running primarily on sales yarn. Under the circumstances, the extent to which Hamilton's 21,000 worsted spindles will be kept operating is problematical. The price paid is reported as $1,400,000 in cash on April 1.

Certain of the properties at Southbridge not used in manufacturing were purchased by business men of the town for $45,000 as an aid to putting the deal through, since the total closing of the plant would have had serious effects upon the community. Just what disposal will be made of this real estate is not known at present.

Officials of M. T. Stevens & Sons Co., with headquarters at North Andover, Mass., deny that their concern is interested in the purchase of the Hamilton Woolen Co. by the J. P. Stevens interests. The rumor to that effect probably arose because of the fact that the families are related and that J. P. Stevens & Co. act as selling agents for M. T. Stevens & Sons Co. Further, the latter concern purchased the Hockanum Mills group last May, thus placing a large number of mills under one selling agent.

With the purchase of the Hamilton Woolen Co., J. P. Stevens & Co. now act as selling agents for about 1,800 looms on woolens and worsteds, distributed among the following concerns, according to latest figures available:

M. T. Stevens & Sons Co., North Andover, Mass.
- *Stevens Group:* Osgood Mills, Stevens Mills, Marland Mill, Peace Dale Mills, Merrimack Woolen Mills, Pentucket Mills, Franklin Mills, Stow Mills. TOTAL, 840 looms.
- *Hockanum Group:* Hockanum Co., New England Co., Springville Mfg. Co., Minterburn Mills, American Mills Co. TOTAL, 428 looms.

J. P. Stevens & Co., New York.
- Hamilton Woolen Co. TOTAL, 550 looms.
- U. S. Worsted Co., Ames Worsted Mills, Richmond Worsted Co., Maine Spinning Co. TOTAL, 25,000 worsted spindles.

The Stevens family has been closely associated with the textile industry of this country almost since its start. Going back to the beginning of the last century, we find Nathaniel Stevens, a member of the sixth generation in this country, trying successively farming, storekeeping, and a year at seafaring. And then, in 1813, he founded a small textile mill. It was erected on the site of a grist mill which had been operated by Gov. Simon Bradstreet in the 17th century.

Textile manufacture had been attempted in New England prior to this time, but not without great difficulty. Amid many discouragements and against the advice of those who believed themselves wiser than he, he persevered. Starting in the manufacture of broadcloth he found this line none too profitable, and soon turned to making flannel. In this line he prospered.

Stevens married the daughter of a prominent manufacturer of Lowell, Mass., and the five sons of this union all entered the textile business. Three of them continued in the business started by their father, and one, Moses T. Stevens, upon the death of his two brothers took over their interests and became the sole proprietor of the business. In 1886 he admitted his two sons, Nathaniel and the late Samuel D., into the firm. At that time Mr. Stevens was the largest individual textile manufacturer in the country. Later Moses T. Stevens, Jr., was taken into the corporation and more recently Abbot Stevens has been admitted.

The expansion of this important branch of the Stevens textile interests has been gradual and steady. The first addition was made in 1853 when the mills, known as "Hale's Mills" in Haverhill, Mass., were purchased. The next acquisition came in 1879 when the Marland Mills of Andover, Mass., were bought. In 1886 the company took over complete ownership of the Franklin Mills in Franklin, N. H., though they have operated these mills under a lease for 16 years prior to that time. In 1904 the Aiken Mills in Franklin were purchased.

The next important step in the development of the company came in 1901, when the business was incorporated under the name of M. T. Stevens & Sons Co. and capitalized for $600,000. Nathaniel Stevens was elected president, which post he still holds.

Another enlargement was made in the holdings of the firm by the purchase of the North Andover Mills, now known as the Osgood Mills, devoted to the manufacture of yarns. In 1918 the firm purchased the Peace Dale Mills in Peace Dale, R. I.; nine years later they acquired the Merrimack Woolen Co. plant in Dracut, Mass., and in 1933 the Gleasondale Mills in Stowe, Mass., now known as the Stowe Woolen Mills.

The most significant transfer in ownership within the textile industry of New England in recent years was made by M. T. Stevens in 1934 in the purchase of the entire Hockanum mill group in Rockville, Conn.

"Captain Nathaniel," who turned to textile manufacture in 1813, is also the ancestor of J. P. Stevens who founded the selling organization which bears his name in 1899. The last named was born in North Andover in 1868 and died in 1929. His early training was with the old firm of Faulkner, Page & Co., which graduated many of the industry's leading merchants. His standards are being carried forward by J. P. Stevens, Jr., and others of the younger generation.

Unemployment Control. . .

Austin T. Levy proposes plan

A PLAN for practically automatic control of unemployment "based on a policy of continuous, not interrupted, employment" was proposed by Austin T. Levy, treasurer of the Stillwater Worsted Mills, Harrisville, R. I., at a hearing held before a subcommittee of the Senate Committee on the Judiciary, on the Black 30-hour bill.

Heretofore, fluctuations in total man-hour requirements, caused by fluctuations in business activity, have been met by corresponding fluctuations in the numbers of people employed, Mr. Levy pointed out. "Thus our whole industrial system is based on a philosophy of interrupted employment, and ever-present reservoirs of unemployed people," he concluded. "It would seem that this is a fundamental error, for in any period of frequent employment interruption, the average wage-earner's business, with its continuing expense, is pre-ordained to failure. We must evolve instead a system that is based on a philosophy of continuous employment.

"Every commonwealth is limited as to the number of unemployed persons which it can reasonably and comfortably sustain. That number should be estimated and stated:—and thus established as the normal of unemployment. Employment for the balance of the working population should then be continuous, only the extent of the employment of each individual fluctuating according to the fluctuations in business activity."

Details of Plan

Specifically the following plan was suggested by Mr. Levy:

"The President announce by executive order:

"1. Normal unemployment for the United States, exclusive of people confined in hospitals, asylums, prisons, etc., is 3,000,000 persons between the ages of 16 and 65. Whether it is actually three million or two million or two and a half million is immaterial. You get a beginning, which is subject to correction from time to time.

"2. The 40-hour week having failed to reestablish a condition of general employment, a 35-hour week becomes effective in all industry at once for a period of 60 days. If at the end of that time unemployment has not been reduced to the normal of 3,000,000 persons, a 30-hour week becomes effective at once for a period of 60 days. If at the end of that period unemployment still stands above 3,000,000 persons, a 25-hour week becomes effective at once for a period of 60 days.

"3. The point at which the figure of 3,000,000 unemployed is reached will then constitute *Normal Weekly Man Hours* for the workers of the United States.

"4. The weekly wages being paid at the present time to be maintained during such successive reductions in working hours as may be required to arrive at normal unemployment—the wage rates being increased to the extent necessary to bring this about. Thus full-time present wages will become actual minimum *wages*, entirely divorced from the confusion of minimum wage *rates* as established by the Codes under the NRA. Minimum wage rates have no meaning unless people have continuous, full-time employment.

"5. When total unemployment is further reduced by the nation's needs to 2,900,000 persons, weekly man hours may be increased not exceeding five hours per week above the normal. When unemployment is reduced to 2,800,000 persons, weekly man hours may be increased not exceeding 10 hours per week above the normal. When unemployment is reduced to 2,700,000 persons, weekly man hours may be increased not exceeding 15 hours per week above the normal.

"6. The weekly pay to be increased in proportion to the increase in hours above the normal."

This plan provides, according to Mr. Levy:

"(1) Constant employment of the population; (2) a true minimum wage; (3) substantial reduction in the risks of the wage-earner's business; (4) periods of relatively large gains as offsets to the remaining risks; (5) practical removal of the cause of the majority of so-called 'labor disputes'; (6) an increase in purchasing power to take care of increased production whenever increased production is created; (7) reduced cost of production as production rises, thus further safeguarding the increased production; (8) a quick curb on over-production whenever over-production occurs; (9) steady industrial operation—reduction of losses due to plant stoppage; (10) a powerful influence on cut-throat competition and the related subject of price fixing; (11) the equivalent of a large reservoir of additional trained people in every factory in every locality whenever required; (12) an enormous majority group of people who never cease to be cash customers, thus assuring liberal and rapid circulation of money; (13) accurate data on unemployment, which is scarcely less important than information on employment; (14) transfer of the burden of public support from Government relief to private industry; (15) return to normal taxes; (16) in every employer in the United States an ardent and active advocate for maintaining the maximum of employment."

Finally, he contended, the plan would automatically operate to draw workers from slack industries to busy industries, and accordingly would tend to establish generally the wages of those industries which are most steadily active, and which as a rule support the higher wage scales.

Means for Administration

The mechanics of administration, he holds, are fairly simple:

"1. Every locality to maintain a registration office. (You have that in existence at the present time, only it is a relief office.)

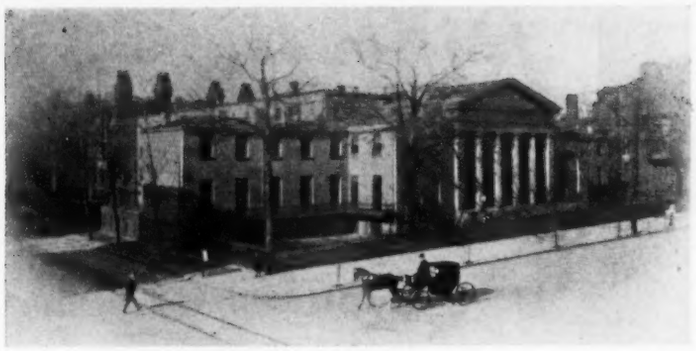
"2. No one to be employed who is not registered.

"3. Every person applying for registration to be registered.

"4. And to receive a registration card.

"5. At the time employment begins, each person to surrender his registration card to the employer, who would endorse it appropriately and return it at once to the registration office. Therefore the number of registration cards outstanding would be an accurate record of the numbers of unemployed persons who wish to work. Persons whose employment is terminated to secure new registration cards before they could be re-employed. (Provision to be made for cards of persons who die, or who cease to desire employment either temporarily or permanently.)

"6. Registration offices in every locality to make prompt weekly reports each Friday to a central State agency, which in turn would inform the U. S. Department of Labor, not later than the following Monday morning of the amount of unemployment in each State. Based on the information so received, the Department of Labor on the last Thursday of each month to make public declaration of the maximum weekly man hours that could be operated by industry for the monthly period beginning with the following Monday morning."



Philadelphia Textile School (This picture proves it's old)

Educational Partnership...

Philadelphia Textile School and Wharton School in unique experiment

THERE are many reasons why the cooperative educational program arranged jointly by the Philadelphia Textile School and the Wharton School of Finance and Commerce, of the University of Pennsylvania, is news. In the first place, it makes a new trend in textile education—and that is always significant. But there are other and almost equally important reasons.

It joins together two long-established and highly-regarded institutions in a common undertaking. Philadelphia Textile School recently celebrated its 50th anniversary; its formation marked the birth of textile education, in its larger sense. Wharton School has also a long history; in addition the members of its Industrial Research Department have played an important part in the affairs of the textile industry. George W. Taylor and H. S. Davis have contributed in a major way to the development of knowledge of the hosiery and wool manufacturing industries respectively. Dean Joseph H. Willits, A. H. Williams, and C. Canby Balderston are all well known in this field. These five men are the ones who are presenting the series of lectures running from Feb. 28 to May 16.

Next, this step is vitally important because it represents a close tie-up between the textile school and the textile industry, not only in the planning for this enterprise, but in the consumption of the product, as it were. A committee composed of T. B. Hayward, of Swift & Co., chairman; Stanley H. Hart, of Hart & Foster Co.; and Allen R. Mitchell, Jr., of Allen R. Mitchell & Son, served as a committee from the trade which cooperated with the faculties of the two schools in bringing the project to fruition.

Furthermore, as indicated above, members of the industry at large are among those who participate to the extent of attending the lectures themselves. In addition, for the senior students in the textile school these lectures are a compulsory part of the curriculum.

Dr. E. W. France, director of the Philadelphia Textile School, who celebrated his golden anniversary at the same time that the school did, is enthusiastic about the new enterprise. He remarked, incidentally, that it is in the general direction of the plans outlined by F. M. Feiker in his report on textile education prepared for the Textile Foundation.

Finally, this development is of particular interest because of the experimental attitude displayed by those on both sides of the scholastic fence, as well as those representing the industry. All seem to feel that the plan has great potentialities, but do not want to limit or direct its progress in any inhibiting way. They have almost an objective attitude toward it—which, in this writer's opinion, is an ideal one to entertain toward an educational project.

The complete list of lectures follows:

Feb. 28: Subject: What Prospects for Textiles in the Fight for the Consumer's Dollar?—a broad analysis of the economic position of textiles in light of current trends in the consumer-goods industries. Lecturer: A. H. Williams, Professor of Industry, Wharton School.

Mar. 14: Subject: The Battle for the Consumer's Textile Dollar—a review of recent trends in the consumption of competing textile products with some discussion of the factors underlying those trends. Lecturer: H. S. Davis, in charge of Wool Section, Industrial Research Department, Wharton School.

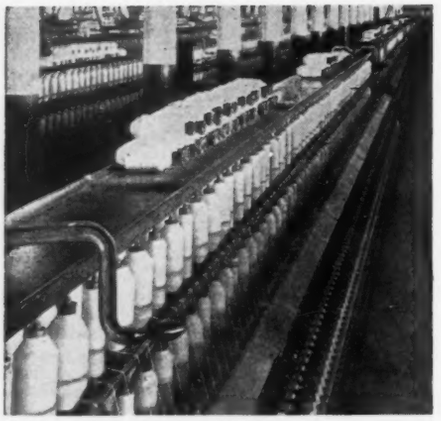
Mar. 28: Subject: The Use of Statistics in Plant and Industry Planning—a discussion of how statistics on production, stocks, equipment, wages, etc., may be used in determining the policies of both individual companies and whole industries as illustrated by samples from the hosiery industry. Lecturer: George W. Taylor, in charge of the Hosiery Section of the Industrial Research Department of the Wharton School.

Apr. 9: Subject: Can Management Problems Growing Out of Style Changes be Solved?—a review of what is being attempted by individual companies in various industries to meet the problems growing out of rapid style changes and the significance of such efforts to textile manufacturers. Lecturer: C. Canby Balderston, Professor of Industrial Management, Wharton School.

Apr. 18: Subject: What is Cost of Production?—a discussion of the principles of cost determination and their application in textile mills. Lecturer: A. T. Cameron, Associate-Professor of Accounting, Wharton School.

May 2: Subject and lecturer to be arranged for.

May 16: Subject: The Government and Textiles—an appraisal of the Government's industrial policy in terms of the textile industries. Lecturer: Joseph H. Willits—Dean, Wharton School.



Ring-Frame Production . . .

By M. E. H. N.

Simplified formulas for cotton and wool calculations

WHERE a variety of counts are spun or twisted, particularly in small lots, spindle speeds cannot always be chosen economically according to recommended standards. The twist per inch is usually determined by the customer's specifications with respect to breaking strength or on the basis of some particular effect desired in the cloth. When combinations of these two factors, spindle speed and twist per inch, differ from those tabulated in the publications of the machinery manufacturers, it becomes necessary to calculate production. This can be done by means of formulas, and it is the purpose of this article to show several such formulas reduced to their simplest terms.

In order to calculate the production for a spinning frame or twister, we must know the front-roll speed, its diameter, and the count of yarn produced; or we must know the spindle speed, the twist per inch, and again the count of the yarn.

First let us consider production based on revolutions of delivery roll, in which case the following formula applies:

$$\text{Prod.} = \frac{\text{R.P.M.} \times \text{Dia.} \times \pi \times \text{Hrs.} \times 60}{36 \times \text{Standard hank} \times \text{Count}}$$

In which "Prod." is production in pounds per spindle of continuous running, "Dia." is diameter of front or delivery roll in inches, π is 3.1416, "Hrs." is hours of continuous operation, "60" is the minutes in an hour, "36" is the inches in a yard, "Standard hank" is the yards per pound in No. 1 yarn, and "Count" is the number of the yarn.

If we select 10 as the hours of continuous operation on which production is to be calculated, we have the following constants in the formula and can reduce them to single constants, as follows:

$$\text{Cotton System:} \quad \frac{3.1416 \times 10 \times 60}{36 \times 840} = .0623$$

$$\text{Woolen System:} \quad \frac{3.1416 \times 10 \times 60}{36 \times 1600} = .0328$$

$$\text{Worsted System:} \quad \frac{3.1416 \times 10 \times 60}{36 \times 560} = .0935$$

$$\text{Typp System*:} \quad \frac{3.1416 \times 10 \times 60}{36 \times 1000} = .0524$$

*Used for all yarns by Bureau of Standards, and now under consideration by wool sub-committee of American Society for Testing Materials as a possible standard for the wool industries.

Multiplying these constants by the diameter of the front roll gives more inclusive constants and permits the compilation of the accompanying Simplified Formula and Table of Constants.

It must be noted that in formulas offered in this article no allowance has been made for stoppage for doffing and cleaning or loss of production due to ends down, and therefore they represent 100% efficiency. Allowances must of course be made for these various items, but they must of necessity be established by each mill in accordance with its equipment, quality of raw stock, count of yarn, and other conditions. Efficiency of the department can be closely checked by comparing the actual production obtained during a unit of time—say 10 hr. or 40 hr.—with 100% production minus a fair allowance for the above contingencies.

Simplified Formula and Table of Constants

Production in lb. for 10 hr. continuous operation = $\frac{\text{R.P.M. of delivery roll}}{\text{Yarn Count}} \times \text{Constant}$

Diameter of Delivery Roll	Cotton-System Constant	Woolen-Run System Constant	Worsted-System Constant	Typp-System Constant
1″	.0623	.0328	.0935	.0524
1¼″	.0701	.0369	.1052	.0590
1½″	.0779	.0410	.1169	.0655
1¾″	.0935	.0492	.1403	.0786
2″	.1246	.0656	.1870	.1048
4″	.....	.1312	.3740	.2096

Next let us consider production calculations based on spindle speed, twist, and count. Assume a yarn of a given count to be made with a specified number of turns of twist per inch on a given diameter of ring—the ring size permitting a given spindle speed. In this case the front-roll delivery in inches must equal spindle speed divided by twist per inch. This is not an absolutely accurate formula, due to take-up and other matters; but it is good enough for practical purposes, and the result divided by front-roll circumference may be considered to equal revolutions per minute of front roll.

Therefore, by substituting this formula for "R.P.M." in the original formula for production, we obtain the following:

$$\frac{\text{Spindle speed} \times \text{Dia.} \times \pi \times \text{Hrs.} \times 60}{\text{Twist} \times \text{Dia.} \times \pi \times 36 \times \text{St. hk.} \times \text{No.}}$$

Canceling out factors common to both numerator and denominator and consolidating the constants, we derive the following simple formulas for production in 10 hr. of continuous operation:

$$\text{Cotton System:} \quad \frac{\text{Spindle Speed}}{\text{Twist} \times 50.4 \times \text{Count}}$$

$$\text{Woolen System:} \quad \frac{\text{Spindle Speed}}{\text{Twist} \times 96 \times \text{Count}}$$

$$\text{Worsted System:} \quad \frac{\text{Spindle Speed}}{\text{Twist} \times 33.6 \times \text{Count}}$$

$$\text{Typp System:} \quad \frac{\text{Spindle Speed}}{\text{Twist} \times 60 \times \text{Count}}$$

Hosiery Gets Bobbed

Knee-lengths open many new merchandising possibilities to knitters

Three representative knee length hosiery numbers of the new season. Left to right: Lace-tops on Gordon "Shorties"; "Queen's Lace Briefs" is Van Raalte novelty number; Berkshire offers smart mesh.

GOOD luck—or perhaps we should say good judgment—is certainly favoring the hosiery industry these days, so far as regards developing new and excellent merchandising opportunities. No sooner had the novelty of three-carrier begun to wear off, than the abbreviated knee-length stocking moved into the limelight, and now the latter promises to equal if it does not exceed the ringless feature in sales significance.

There are five major aspects to knee-length hosiery: (1) its history, (2) market growth, (3) prices, (4) merchandising policy, and (5) future prospects. We will discuss these in sequence. The advent of the elastic-topped hosiery ending just below the knee was made possible by the perfection of elastic textile yarn. Recognizing its market possibilities among women who rolled down their hosiery, but who objected to the bumps which that practice gave to the contour of a tight dress, manufacturers concentrated for several years on developing a new product. Their aim was to perfect a stocking which would be self-supporting and thus eliminate need for garters.

Holeproof Hosiery Co., one of the pioneers in the field, finally developed a knee-length full-fashioned stocking which had commercial possibilities. This was placed on the market about a year ago and was well received. Other manufacturers rapidly followed with various types of knee lengths until today virtually every firm making women's hosiery has at least one such number in its lines.

As regards market growth, knee-length hosiery is still minor; the output is less than 5% of the total hosiery production. However, it is gaining favor rapidly this winter,—both for formal wear in the North, and for formal and daytime wear at Southern resorts where the cold weather does not militate against it. It should be a big contender for hosiery sales in all areas during the coming summer. With respect to prices, knee lengths are selling in all brackets. For full-fashioned three-carrier knee-length $6.00 is the usual minimum wholesale rate, while $6.25 is the average. Seamless silk or rayon knee-length stockings are being sold very low by chain stores, some retailing at 44c. or even 29c. At the quality end, lace effects and other novel designs sometimes bring the prices up to $10 wholesale.

The merchandising of knee-length has created a flock of problems and many of these are not yet solved. Nomenclature of course is one. What should the baby be christened? Every firm has tried to answer this question in its own way and as a result, the trade is a-clutter with countless mystic names, coined to designate the various qualities of the new hosiery.

Imagination roams high, wide and handsome in naming knee-length lines. Here are a few titles picked at random from the spring 1935 promotion: "Hold-ups", "Way-Knees", "Not-Hys", "Shorties", "Snugettes", "Hosettes", "Nee-Zees", etc. How knee-lengths may best be shown in merchandise displays is as yet an unsolved problem; there is increasing belief in the trade that this line should not be shown on a leg form. One effective and novel display method has just been introduced in New York by a manufacturer; in this instance, a lace-top knee-length stocking is draped over a hand form; the top of the hosiery falls over the hand, very much like the top of a glove, and the effect is distinctive and striking.

What are knee-length hosiery's future prospects? There are three chief aspects to the outlook: First, mills will succeed with knee-lengths largely in proportion as they concentrate on the styling of the top, since competition is definitely focussing on that phase of development; second, the fit of the stocking will be a more important sales argument than hitherto because the garter usually relied on to make the stocking taut is eliminated; third, it is conceivable that eventually, due to their greater comfort and freedom, knee-length stockings may supplant standard-length hosiery among all except elderly conservative wearers. We might indeed add a fourth point, namely, that the style due to its summer-time coolness is likely to offset the trend toward bare legs and so regain a market for hosiery.

Some of the foregoing is conjecture. However, the dominant fact is that knee-length hosiery is definitely with us and it opens a wide range of new sales possibilities, limited only by the ingenuity of the individual firm.

Ratching for Mohair

And several other matters of interest to the worsted mill

By Alfred Heaton
Consulting Textile Engineer

◆ *This is one of a series of articles by Mr. Heaton on "The Composite Worsted Mill," discussing the best methods employed by some twenty leading spinning plants. Others appeared in the issues of September and November, 1933, and January and April, 1934.*

ONE of the most common and puzzling complaints connected with the spinning of mohair is the tendency of the yarn to curl or cockle; and inasmuch as this defect does not become noticeable until after the yarn has been spun, the natural assumption is that it is caused in the spinning department. As a result, ratches are moved back and top carriers are taken off; but a cure for the condition is seldom effected in this manner because the defect is usually due to faulty ratching in the drawing department. The stretched fiber is wound tightly on the roving and naturally contracts at the first opportunity.

The ratching of mohair in the drawing department entails a somewhat different consideration from the ratching of wools in general. This is due to the mohair fiber having so much more elasticity.

Ordinarily the ratches—that is, the distances from the nip of the front rolls to the nip of the back rolls—depend on the drawing overseer's judgment. Experience has enabled him to decide just what percentage of the longest fibers should be broken in order that the spinning overseer may produce a yarn which is comparatively even. Assuming the longest fibers in a top measure about 11 in., when the roving reaches the spinning department the longest fibers will measure only some 10 or even 9½ in.—the exact amount varying, of course, with the blend and the amount of short fiber used.

It is the custom of more than a few drawing overseers to measure the fibers in a top and then decide immediately as to the length of ratch for each of the drawing operations. From the writer's experience, however, better results can be obtained by measuring the stock for each operation. If the longest fibers of a top measure about 11 in. and the drawing overseer decides that it should spin well at about 9½ in., in the usual course of events he has the ratch of each operation set about ¼ in. closer than that of the preceding operation, breaking these longer fibers gradually. This procedure is quite all right for wool; but in the handling of mohair it is not always advisable, due to the greater tendency of mohair to stretch rather than to break.

If, in the ratching of mohair of a similar length of staple, the drawing overseer will have all the necessary breaking of fibers done on the first three operations and then maintain approximately the same ratch in his finishing operations, there will be little complaint as to cockles in the yarn. This might mean beginning with a ratch of 10¾ in. on stock with a maximum length of 11 in., dropping ½ in. in each of the next two operations, then maintaining a ratch of perhaps 9¾ in. in the remaining operations. Roll pressures in the finishing operations are too light to break fibers, and permit them to slip through. Cockling caused by breaking in the early operations is straightened out by the drafting process in the finishing operations.

A Little Preparedness

Leaving the specific subject of mohair for the time being, let us consider another matter common to all worsted mills.

Much of the time which is lost in changing spinning frames from one lot to another can be saved by a little preparedness. By assembling all the necessary gears in advance, by having two trucks in readiness (one for the rovings coming out and one with the rovings to be put in at the end of the frame), and by properly training the doffers, a change which ordinarily takes about an hour can be effected in about ten minutes. All gears can be changed while the doffers are doffing, winding back, and taking out the rovings. Then by concentrating the doffers on one side to put in the new rovings and pull the ends down, avoiding interference, the overseer can change the ratch on the opposite side, reversing with the doffers when finished. All this is merely a matter of planning on the part of the overseer, but it is astonishing how much time and material, which are the equivalent of money, he can save in this way.

A Blending Suggestion

Let us critically examine our more-or-less standard blending methods for a moment. The blending of the various grades of wool is usually done directly after the wool has been sorted. Most of our larger mills have their own particular blends which have been found satisfactory over a period of years. Assuming a blend is to consist of four grades of wool, some convenient spot on the floor is covered in a fairly even manner with the first grade and the other grades are laid on top of it in the required proportions. The thickness of each layer is of course governed by the amount or percentage of the particular grade as specified in the blend. This wool is then picked up in sandwich fashion, being grasped from the bottom and top, and is dropped into the washer. After it has been scoured, dried, carded, and combed, it would seem as though it should be fairly evenly blended.

It is open to question, however, whether the blend is as even as it would be if each grade of wool were washed, carded, and combed separately and blended in smaller quantities on a gill box in the combing room with each amount running out evenly. This latter method is being used by some of our mills spinning heavy counts. While it seems a bit revolutionary, nevertheless it is at least a much cheaper method.

By C. W. Bendigo
Glen Raven Silk Mills, Glen Raven, N. C.

Whizzing Rayon . . .

Accurate control is just as important in extracting crepe yarns as in soaking

SOAKING is only half the story in preparing rayon yarn for throwing into crepe. Extraction is the other half. The formula used in soaking is of no more importance than the degree of extracting. Yet we are all greatly interested in the former, but are prone to neglect the latter. Varying the extracting is the same as varying the soaking formula. This explains why a formula sometimes will seem to go wrong without apparent reason.

Extracting of soaked real silk is comparatively simple compared with extracting of soaked rayon. In the case of silk, the soaking liquor is almost exhausted of its important ingredients, and the whizzing is largely a matter of getting rid of the excess water. In the case of rayon, however, the take-up of gelatin is in proportion to the amount in the solution, and the oil is by no means completely exhausted from the bath at the end of the soaking operation (TEXTILE WORLD, July, 1934, p. 73). When extraction takes place, part of the water, oil, and gelatin is forced out of the yarn. The important thing is to control the amount of each ingredient which is left to be dryed into the skeins.

To take a concrete illustration, let us assume that a 60-gal. bath is made up with 4 lb. of gelatin and 16 lb. of oil. This means that the solution will contain 0.8% of gelatin and 3.2% of oil. This will accommodate about 100 lb. of yarn. After the yarn has been allowed to soak in the bath at about 120 to 130° F. for 25 to 30 min., it is put in the extractor and extracted down to 100%, which means that it will contain its own weight of soaking solution.

It is evident that under these conditions, there will be about 0.8 lb. of gelatin and something over 3.2 lb. of oil in the yarn. If, on the other hand, the extracting is continued until there is only 75 lb. of liquor left in the yarn, the gelatin content will be only 0.6% and the oil content about 2.4%, which would be the same as having a 100% extracting with a soaking formula of 3 lb. of gelatin and 12 lb. of oil. That is, excessive extracting is equivalent to reducing the strength of the soaking solution. It is evident, therefore, that the formula used and the extracting must go hand in hand if uniformity is to be maintained and trouble avoided.

Experience seems to indicate that extracting to 100% is the most advisable, because of its simplicity in every detail and also because the yarn is at about the proper wetness at that moisture content. If the yarn is allowed to retain 125 to 150% of its own weight of the solution, there is danger of the liquor running to the bottom of the skeins while drying, which causes various troubles. To extract much under 100% is difficult and dangerous, because the yarn grows cold and is not prone to give up its liquor. About 90% extraction is satisfactory, but here one loses much simplicity of calculation and manipulation.

One of the simplest ways of determining the degree of extraction is to weigh several bundles or bags of yarn before soaking and after extracting. At the desired 100% extraction, a bundle weighing 10 lb. before soaking should weigh 20 lb. as it comes from the extractor.

It is necessary to test each different type of soaking, because what is found to be ideal for one yarn may not be for another. For instance, fine denier, multi-filament yarn takes longer to extract down to 100% than does coarser yarn. The amount extracted at one time also affects the time needed to extract down to 100%. When one is soaking from 220-lb. cases, 110 lb. of yarn might be put in one load; when soaking from 300-lb. cases, 75 lb. might be the unit. Naturally, the time required for the latter would be less than for the former. The temperature of the yarn seems also to be of importance, for apparently the colder it becomes, the harder it is to extract.

In order to be sure that each soaking will be the same as the last the following steps must all be kept uniform: (1) make-up of the solution, (2) all mixing and soaking temperatures, (3) amount soaked per bath, (4) length of soaking, (5) length of dripping time, (6) amount extracted at one time, (7) speed of the extractor, and (8) length of time of extraction.

Variations in soaking cause variations in the pebble of crepe fabrics, as well as in the running qualities of the yarn while it is being thrown or woven. Rayon yarn which has been extracted thoroughly will crepe more than yarn which has been soaked in exactly the same way but extracted only lightly. Many complaints of uneven pebble could be avoided if proper precautions were taken to prevent variations in extracting.

Spiral-Float Unit

For seamless-hosiery machines

By George E. Cottrell
Consulting Knitting Engineer

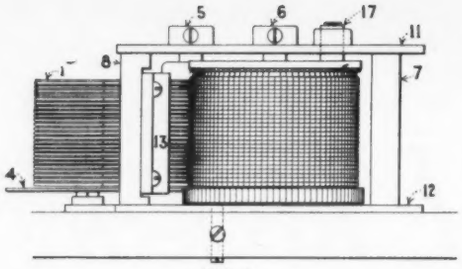


FIG. 1

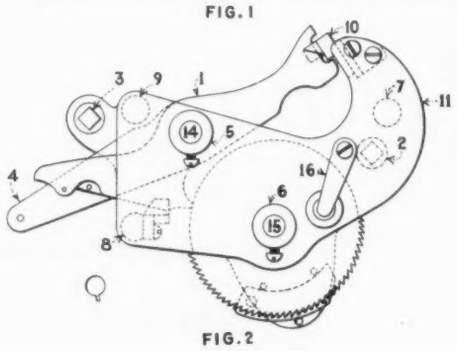


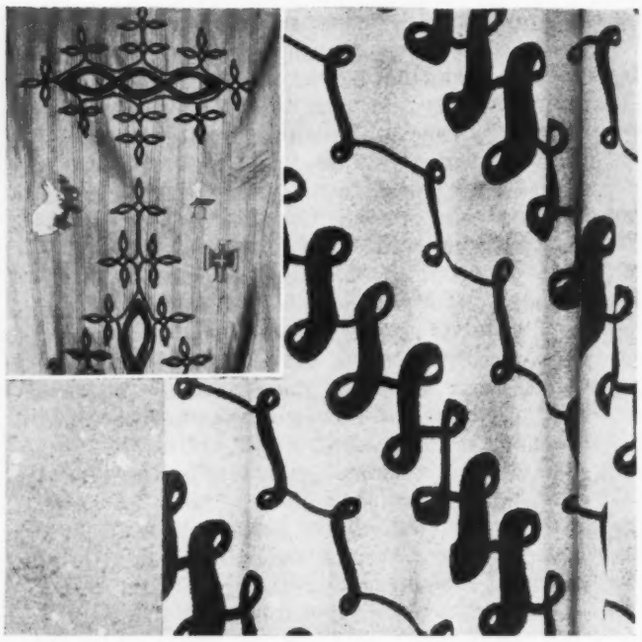
FIG. 2

VIEWS of an improved unit for controliing the pattern jacks in a Model K spiral-float circular-hosiery machine are shown in Figs. 1 and 2. In this unit there is no change in principle from the regular device. The advantage is in the fact that the parts are assembled in a compact unit and that the assembled unit is readily adjustable, both radially and circumferentially, to give any setting needed to produce a perfect pattern on the hose fabric. The writer, early in his experience with the spiral-float machine, realized that a circumferential adjustment would be especially desirable, as it is very important that the spiral jacks that are made idle should be held to the bottom of their slots until they reach the jack cam so that there will be no chance for them to rebound and become active.

The frame of this device comprises the parts described in the following: Part 12, Fig. 1, is the lower plate, and 11 is the top plate. The pillars 7, 8, and 9 are solidly welded, or brazed, to the top and bottom plates, thus forming a rigid frame. Bosses 5 and 6 are also welded to the frame, for the purpose of anchoring the vertical shafts 14 and 15 in their reamed holes. The clamp screws pass through holes at 2 and 3 which are somewhat larger than the screws to give a universal horizontal adjustment and to fasten the frame securely to the bed plate of the machine. The assembly represented by the numerals 16 and 17 is designed to friction the selector drum in the usual manner. The separator combs represented by parts 10 and 13 require no special comment.

This control unit is not difficult to build or to assemble. It is easily adjusted, stays put, and is well worth the effort required to construct it.

INSPIRED BY GUATEMALAN COSTUMES

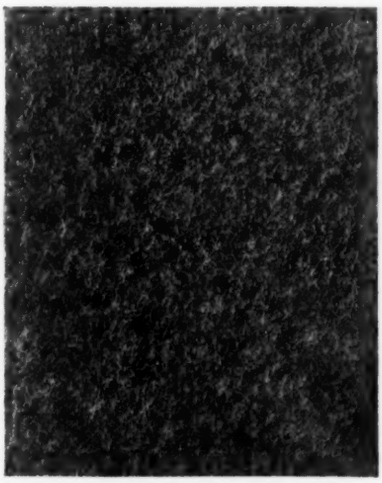


Two of the designs by Ruth Reeves as the result of a year of study in Guatemala at the suggestion of the National Alliance of Art and Industry. On the left is "Guard of Honor," a looped-braid design of cochineal red printed on a natural-color "Luvet" fabric, representing the first time a Cellophane fabric has been printed. The fabric, designed by Donald Deskey, is from F. Schumacher. At upper left is the source material which inspired it: a man's coat from Cotzal, which in turn is the Indian adaptation of the coat of Guard of Honor costume in the court of Charles V, 16th Century Spanish.
On the right is "Concepcion," hand-printed by Miss Reeves on machine-woven fabric from Wellington Sears Co. The chevron-striped design is printed in a new taupe shade called "elephant's hide" on a rough off-white fabric. At upper right is its source-material, a woman's fiesta huipil (or blouse) from San Martin, in the Quetzaltenango region.

Camp Blankets

By Howard Price Galloway

Find new opportunities beckoning

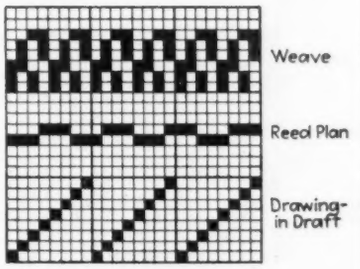


Blanket produced by layout No. 1

Blanket Layout No. 1

Blanket size, 72"x84"; weight, 4 lb.
Reed, 3x6½, 76½", 1440 ends.
22 picks (19 picks at the loom).
Yarns, warp and filling, 5-cut woolen.
Color, heather mix.

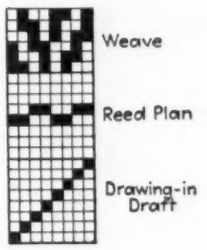
	Length	Weight
At the loom	88"	.....
At the perch	86"	32 oz. per yd
Finished	84"	27½ oz. per yd



Blanket Layout No. 2

Blanket size, 72"x84"; weight, 4½ lb.
Reed, 2x10½, 90", 1890 ends.
Picks per inch, 17.
Yarns: warp, 7-cut, woolen; filling, 5½-cut woolen.
Color: stock, yarn, or piece dyed.

	Length	Weight
At the loom	88"	.....
At the perch	86"	32 oz. per yd.
Finished	84"	29½ oz. per yd.



SEVERAL trends point to an increase in use of the popularly styled "camp" blankets. One is the added leisure hours with which, as a result of recent economic changes, most of us find ourselves endowed to some extent. A large part of this free time will probably be spent in the out-of-doors. Hiking and camping trips to the numerous parks and nearby woodland spots, while enjoyed by many Americans, have been practically crowded out of the average family's picture by the industrial pressure of the last few years. These should now enjoy a new prosperity of their own.

Another factor making for increased use of "camps" is the recent emancipation of the American cellar. All over the country, as a result of the intervention of oil, gas, and other methods of automatic and partly automatic heating, cellars are becoming "basements," "recreation rooms," or "game rooms," in a widespread move to take advantage of the less-expensive diversions. Obviously a dainty creation in orchid and green does not fit this picture; but a sturdy camp blanket does perfectly and offers a convenient covering for the catnaps which are a part of the pleasure in every game room in the country.

A third point in favor of a greater popularity of "camp" blankets lies in their economy. In many cases they cost only from one-half to one-third as much as do the better-grade bed blankets. This should give a decided boost to their use in these days of low salaries. Already many boys' bedrooms are outfitted entirely with camp blankets; their sturdiness adds an appreciated note of ruggedness.

Layout No. 1 produces a blanket 4 lb. in weight and 72x84 in. in size. These proportions will be found adequate for most uses—the weight is average and the size allows a generous margin for tucking in at the bottom. Warm feet, incidentally, are the corner stones upon which the experienced camper builds a good night's sleep. So, length is desirable.

The blanket described is all-wool, made from reworked stock such as rags and clips. (Camps are also made in part-wool and all-cotton versions.) The weave is a 3/3 broken steep twill, running two ends to the right and two to the left. The draw is straight, on four or eight harnesses; the warp is reeded three and three.

Both warp and filling are 5-cut yarns, and the color is a heather mixture. Blues, grays, khakis, and similar shades are also made. The blankets are woven both plain and with decorative stripes of contrasting colors placed near each end. They can be run on automatics.

Better-Grade Blanket

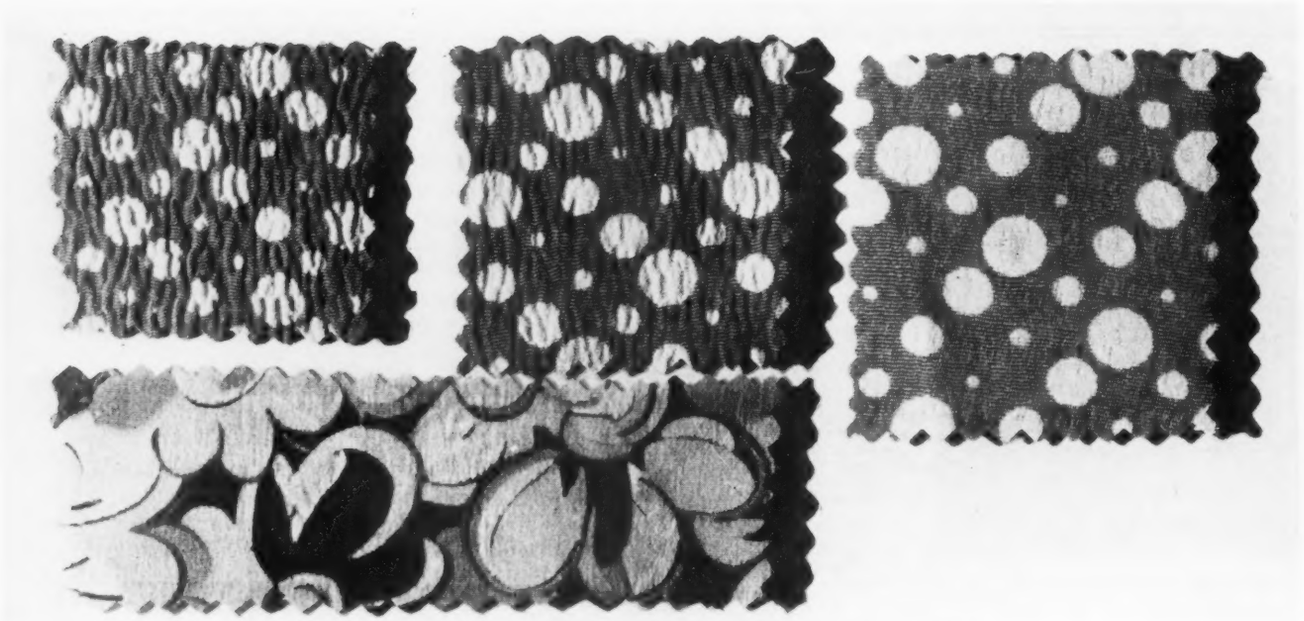
Layout No. 2 is for a similar-type blanket. Production of this blanket will be found slightly more expensive than for that just described, due to the fact that finer, better-grade yarns are used and that the blanket is woven at 90 in. and then shrunk to the 84-in. width in the finishing process. However, it offers several advantages. Among them are that a higher, more fluffy nap can be secured, that there will be less likelihood of shrinkage during laundering, and that a greater variety of shades is made possible by the better-grade stock used.

The weave in this blanket is similar to that employed in layout No. 1, except that the twill runs four ends to the right and four to the left, rather than two right and two left.

The warp is drawn straight on eight harness, and reeded two ends per dent. This blanket may be either stock, yarn, or piece dyed.

Manufacturer and finisher should pool their information on

What Makes



Top row (left to right) Figs. 1a, 1b, 1c; lower left corner, Fig. 2

IN the majority of cases when a converter or mill sends a new construction of a crepe fabric to a job finisher, the instructions are to this effect: "Finish to show best crepe effect possible." Immediately the responsibility of making the fabric an attractive and salable article is placed upon the finisher. If the finisher has had considerable experience with various types of crepes, and his technical and plant staffs are competent, he will be able to produce a satisfactory result. However, even better fabrics could be obtained—and at less expense and with a considerable saving of time and energy—if the throwster-manufacturer, the converter, and the finisher would work together more closely, so that each would know the construction of the cloth; the type, size, and turns per inch of the yarn; the amount of shrinkage wanted; and the exact finish desired.

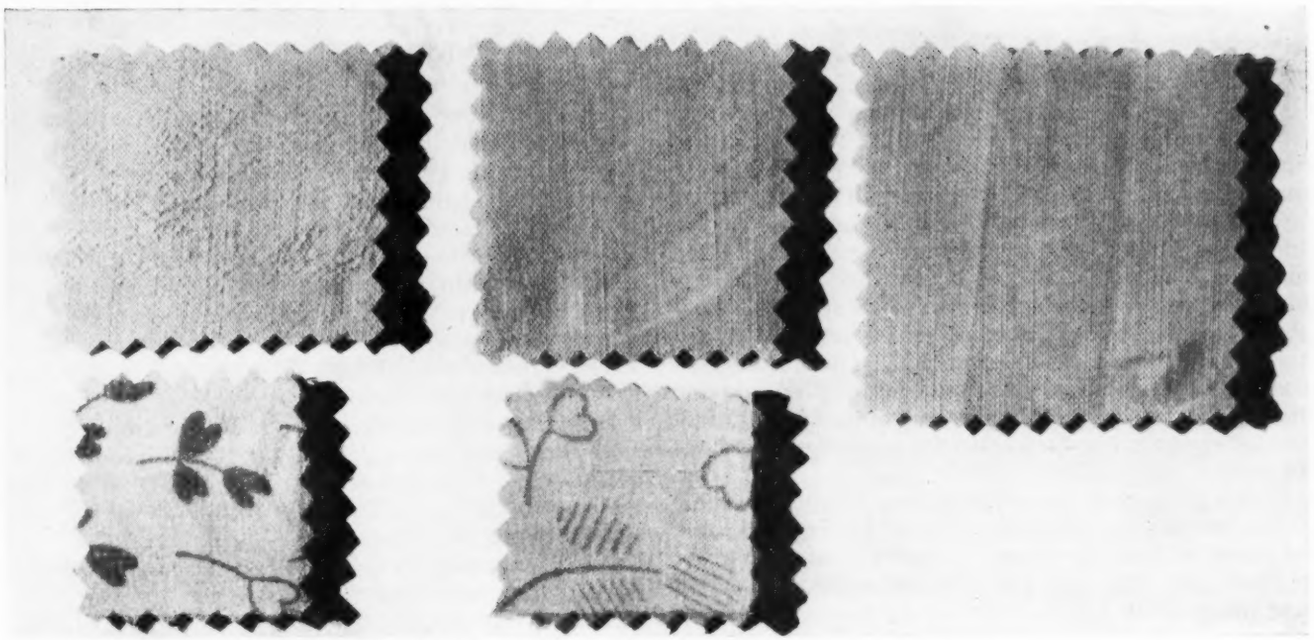
Today when the finisher receives a new sample of crepe fabric, he seldom is able to obtain any information from the owner of the goods other than the original instructions to finish the fabric to show the best results. This being so, a swatch of the sample lot must be sent to the laboratory for a complete analysis, the results of which are reported to the superintendent in charge of processing. The superintendent and the various overseers now have to determine what method of wet processing is most suitable. If the construction of the fabric is similar to one which they have already finished, the problem is comparatively simple. On the other hand, if the material is something new, or is entirely different from anything they have handled before, it is necessary to proceed more carefully. In the latter case, three or four 1½-yd. swatches must be processed with lots which are going through the plant in different ways. These samples are marked by means of threads sewed into the selvages exactly 1 yd. apart. After the samples are creped, they are dried, and then the percentage of shrinkage obtained by each of the several creping methods is determined. Next the most promising swatches are finished, in order to get an idea as to which procedure will give the best final results. From these tests the superintendent and overseers decide exactly what treatment to give a trial piece or lot.

It often happens, however, that the tests show up excessive creping or other faults which cannot be remedied in finishing. Correspondence with the owner follows, advising him that it is not feasible to proceed further or that changes are necessary in the gray construction if a satisfactory finished fabric is to be obtained. It may be found, for example, that the sample is full of gray crease marks, due to too low a construction or faulty handling at the loom; again, the yarns may be twisted too highly, which produces a tightly knotted and harsh crepe; or, if the crepe is a four check, the pebble may not be prominent enough.

Shrinkage of crepe fabrics is of major importance and must be carefully controlled. Here also closer cooperation between the manufacturer and the finisher would lead to better results. A fabric woven 41 to 42 in. wide should finish 36 in., and the warp take-up should average about 12½% on the best materials. If the twist is too great, the take-up will be excessive. Such a fabric finished with 12½% shrinkage will shrink more after it has been made up. On the other hand, if the material is allowed a complete take-up in finishing, it will sag afterwards. Either of these conditions will be the cause of claims. Figs. 1*a*, 1*b*, and 1*c* illustrate the results obtained in finishing a fabric which has an excessive take-up. Fig. 1*a* shows a sample which is fully shrunk; both the handle and appearance are unsatisfactory. Fig. 1*b* shows a sample finished to the normal 12½% take-up; what

By C. A. Jennings

a Crepe?



Top row (left to right) Figs. 3a, 3b, 3c; lower left corner, Figs. 4a, 4b

would happen upon washing a dress made from the fabric which was finished in this way is obvious. Fig. 1*c* shows a sample which is partly shrunk; the crepe effect is hardly noticeable.

In the case of the all-rayon pebble type of crepes we find a somewhat different condition. Fabrics of this nature are allowed to crepe slowly and evenly, and, when finished, look almost like a plain-woven piece of cloth, but have the give or elasticity of the crepes. Even when these fabrics are shrunk to the limit, the crepe effect is hardly visible. Fig. 2 illustrates a popular construction of pebble crepe which is woven 41 in. wide with 120 ends per inch of rayon warp, two and two, "S" and "Z" twist, about 45 turns per inch.

With cotton-rayon flat crepe, it is necessary to get all the shrinkage possible and not lose it during the finishing operation. A typical flat crepe is illustrated in Figs. 3*a*, 3*b*, and 3*c*. This is woven 37 in. wide, with 76 ends per inch of two and two, "S" and "Z" cotton crepe in the warp, and 56 picks per inch of ordinary rayon in the filling. When this fabric is finished to a width of 35½ in., with about 7% warp shrinkage, a full, soft, well-filled material is produced. Many finishers try to have only 2 to 3% warp shrinkage, but an open fabric results, with the rayon filling standing out to give the appearance of an alpaca, rather than a crepe. Fig. 3*a* shows this fabric in a full-shrunk finish; Fig. 3*b* shows it with a 7% normal finish; Fig. 3*c* shows it with between 2 and 3% warp shrinkage. (Difference in size of swatches is exaggerated to emphasize shrinkage variation.)

In the case of light-weight, sheer crepes, correct shrinkage in both warp and filling is most essential. If the crepe yarns are allowed to take up properly, a beautiful fabric results. If shrinkage is held to one-half or less of normal, the fabric is worthless as a crepe, having the appearance of a voile or scrim. This is illustrated in Figs. 4*a* and 4*b*. Fig. 4*a* shows a light-weight crepe fully shrunk; Fig. 4*b* shows the same fabric half shrunk.

The various illustrations have shown good fabrics and bad. The discussion of them has been for the purpose of bringing out two points: (1) A finisher, no matter how good he is, cannot produce satisfactory results on crepes which are not properly constructed and woven; (2) No matter how good the gray fabric may be, the results will not be satisfactory unless it is properly finished.

Many of the difficulties encountered in finishing can be avoided and a considerable improvement made in crepe fabrics if the manufacturer, finisher, and converter will pool their information. The manufacturer should know just what yarns are necessary to produce a light or full crepe; he should know the relation between the gray and finished width; he should know what the warp take-up is going to be. The finisher also should have this information and should have a sample to finish to or should be given a definite idea by the converter as to the effect desired. The converter, if he is trying to reproduce some fabric, should have a piece of it for the manufacturer and the finisher to duplicate; if he is trying to produce a new fabric, the knowledge and experience of both the manufacturer and finisher are invaluable to him.

With such an interchange of information it would not be long before the manufacturer would know exactly what effects can and cannot be obtained with a given type of yarn and a given construction of fabric. The finisher, knowing, for example, that a fabric is an all-rayon, 120x72, 41-in., 150-denier, 45-turn, two-check, warp crepe, could proceed immediately with the processing. The converter would spend less time and money in reproducing fabrics or creating new types of crepes.

Application of engineering principles to machinery layout is first step toward

By Miles Sampson

Bleach-House Efficiency

THE typical bleach house of a few years ago was a dangerous maze of swiftly moving cloth running to and from all points of the compass; it was dimly lighted, with wet and slippery floors. The modern bleach house is an orderly place, with the cloth travel carefully planned to follow a straight-line course. Machines are housed, and spattering water is kept at a minimum. Heating and ventilation are adequate, so that it becomes a desirable place in which to work. Less labor is required; fewer breakdowns occur; a better and more uniform product is obtained. The result is a room with a high percentage of operating time and a production cost approaching a minimum. The difference between the two bleach houses is largely a mechanical one.

With a given room an overseer soon reaches the limit of his possibilities. Machinery arrangement and control more or less determine the number of operatives required; the type and condition of equipment determine the possible speeds. Better understanding of the process requirements may eliminate needless machines or operations. In short, order, cleanliness, better working conditions, increased speed, improved quality and lowered costs follow the application of engineering principles to the problems of equipment design, control, and maintenance.

The initial step in planning a new bleach house or the modernization of an old one is the setting up of a machinery-process schedule. This schedule should be exact and complete, and it should include an outline specification in process sequence of each piece of equipment. It must be made out by, or at least have the complete approval of, those who are to be responsible for the future production.

More often than not modernization of the bleach house calls for the investigation and incorporation of new ideas, rearranging of equipment for higher speeds, replacement of bins, omission or addition of operations, or other modifications. The possibilities of trouble enter here, and, as far as is feasible, any proposed changes should be tested in practical operation over a period of time before the draftsman's pencil is put to paper. Major changes, particularly, should be so tested before they are incorporated in the final schedule. Money spent in trying out ideas may bring big returns; it certainly will save the large expenditures entailed in making changes which later are found to be impractical.

Let us assume that a mill has decided to modernize its bleach house and has settled on the following machinery-process schedule:

1. Gray washer, sour squeezer and sour washer, and kier pilers all in range, feeding
2. Pressure kiers, with pumps and heaters.
3. Kier washer, chemic squeezer, chemic pilers, chemic washer, sour squeezer, two white washers and scutcher, all in range.

The schedule chosen contemplates bleach-house delivery of opened cloth into trucks, ready for the white drying, as being most economical for a modern one-story plant. It avoids the entire investment in bins and piler, and one-half of the scutcher cost incidental to the use of white bins where the cloth is held in rope form. From the schedule, it is easily seen that the room resolves itself into two ranges, one kier-filling and one kier-emptying or bleaching. This one stopping place on the way through the room is essential under the assumed (normal) conditions. Each range should meet the following specifications as nearly as possible, considering space limitations: (1) It should afford orderly cloth flow, with easy pulls; (2) it should have a simple group drive; (3) machine controls should be at the fewest possible points; and (4) it should allow for slack cloth between all machines.

An arrangement of the assumed machinery schedule meeting the conditions named above is shown in the accompanying sketch. The location of the kier-filling range can be almost independent of the singe house, as the gray washer will easily pull the roped cloth several hundred feet. It should be centrally located with respect to the kiers it serves, so that the kier-piler pull will be short and direct. The range itself is compact, can be operated by one motor, with two machine controls close together and under the care of one man. These control points are: (1) the gray washer, which drives the sour squeezer; and (2) the sour washer, which drives the kier pilers.

The bleaching range, with more machines, cannot be as compact; but the cloth pulls are easy, and the cloth progresses in one direction without reversal. The range can be operated by one motor, with four machine control points under the care of two men. These points are: (1) the kier washer, which drives the chemic squeezer and pilers; (2) the chemic washer, which drives the sour squeezer; (3) a white washer; and (4) a second white washer, which drives the scutchers.

The general arrangement should be such as to allow room to handle washer rolls, whatever their length, in and out of the machines.

Two motors, of from 50- to 100-hp. each are required, one for the filling unit, and one for the bleaching unit. The motors should be placed on the ceiling, away from water and the heat from the kiers. As a rule, two kiers must be emptied daily before filling can be started; therefore the operating times of the two ranges do not coincide. There is also a time lag in the bleaching unit, due to cloth in the chemic pilers tending to make that unit run longer hours.

All squeezers are driven by the preceding washers to simplify controls. Clutches should be provided, however, on the squeezers, as an easy means of controlling the amount of cloth in the tubs, although they would be used only occasionally. Speed synchronization within each range should be accomplished by means of ex-

pansion pulleys on the overhead shaft. The ranges need not be synchronized with one another.

Little attention was given in the older bleach houses to the disposal of water. This was not serious when speeds were low; but with increased speeds more and more water escaped from the rough housings to make the floors slippery and other working conditions unpleasant. In the modern bleach house this should not be tolerated, since it can be avoided by keeping all washers and squeezer tubs below the working floor, and by adequately housing the machine parts above the floor.

Bearings cannot be kept in line without good foundations. For the washers and chemic squeezer concrete will be satisfactory.

Make provision for renewal of holding-down bolts when necessary; do not build them in solid. A dry stone foundation, laid up without mortar and provided with stainless-steel holding-down bolts, will prove suitable for the sour squeezer and white washers.

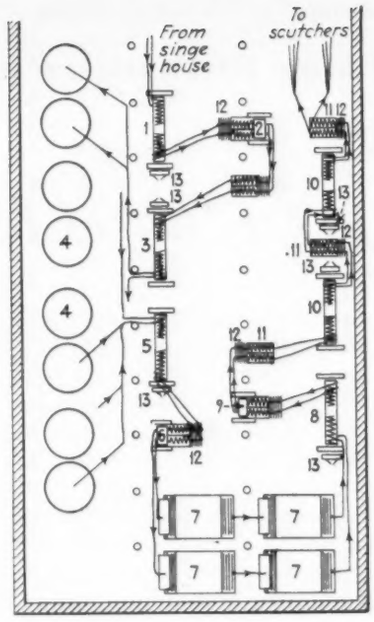
Roll bearings have been crude and neglected in the past, probably because they were flooded with water. With good housings, bearings can be improved, to run for years without failure. The lower ones can be heavy, ring-oiling or bronze-bushed pillow blocks; the upper ones, bronze-bushed, but lighter, arranged for guiding in the machine frame and for taking pressure from the loading screw. Some provision should be made in the upper bearing for uneven raising of the roll, which might cramp the bearings and even spring the shaft.

Whatever design of washer or squeezer frame is used, rubber-covered rolls are a necessity for a smooth-running, high-speed bleach house. They are clean, uniformly dense (to specification), and wear very slowly. If desired, they can be obtained with raised shoulders at each end to give an exceptionally good squeeze to the entering and leaving cloth. The bottom roll should be of good size (say 15 in. for a 10-ft. roll) to avoid bending, and the shaft should go way through the roll. The top roll may be smaller, 10 or 12 in. in diameter, with shafts in the gudgeons only, particularly if the squeeze is not to be heavy. Density of rolls is an exceedingly important point in successful operation, and once the correct density has been determined, it should be regarded as a standard.

Plan to set all reels as high as possible, 15 ft. from the floor is not too much. The added weight of the delivered strand will help the cloth grip and the reel pull. Do not have over eight slats per reel, giving a space of 5 to 7 in. between slats. The outside surface of each slat should be a square-edged piece of maple, with the corners only slightly chamfered. When a reel seems to lose its previous pulling power, look to these slats, and renew them if the corners have become badly rounded by wear; do not increase the draft by adding other slats.

Cloth routing is worth all the study that can be given to it. Planning should be done on paper, rather than on the job. For conveying cloth, full use will be made of the ordinary pot eye, on account of its simplicity, ease of mounting, and low cost. On an eccentric swivel mounting, the pot eye provides a simple way of adding tension, as on a short pull to a tight washer. On long pulls rollers must be substituted to decrease friction. Rollers must work freely under all conditions, and must not foul or break the cloth under tight or slack conditions.

In reference to kier piling, it is necessary only to note that on all ordinary fabrics hand piling would not be



1, gray washer; 2, sour squeezer; 3, sour washer; 4, kiers; 5, kier washer; 6, chemic squeezer; 7, chemic pilers; 8, chemic washer; 9, sour squeezer; 10, white washers; 11, slack boxes; 12, reels; 13, clutch pulley.

Diagrammatic plan of two-end bleach house showing cloth routing to give straight-line flow of cloth.

permitted in the modern bleach house, one of the various types of automatic pilers being used.

As generally installed, all squeezer tubs are arranged to hold 50 to 100 yd. of cloth in slack form, as delivered by a washer, for saturation with chemic or sour. Between all other machines slack boxes must be provided, of at least this capacity, and 200 to 300 yd. if possible. To attain a process continuity impossible with a bin, chemic bins are replaced with one of the specially designed oxidizing machines or with a Gantt J box, enlarged sideways as necessary and provided with a traverse motion. In general, 1 cu. ft. will hold 8 to 10 lb. of cloth (dry gray weight).

When white bins are used, they will be most economical to build if made in a double row and as large and deep as feasible. Under these conditions their unit cloth capacity is increased by the settling due to time. The capacity of each should be in direct relation to the kier load, equal to or one-half or one-third of it, to facilitate keeping track of the various lots and grades of cloth. Total capacity will need to be 60 to 75% of the kier capacity as a minimum, up to 100% as a maximum.

Piping for water will normally be run in the basement, and the valves to the various tubs will be operated by means of extension rods, terminating in a floor stand and handwheel. Be sure the flow in the tubs is definitely in the direction wanted, by providing a slot for overflow at the opposite end from the entrance. Do not let any out-of-level or leaky condition of the tub determine the overflow point. The quantity of water needed can be determined by tests, and the flow controlled by inserting orifice plates in the supply lines serving the machines. Often it is possible to reduce consumption of water in this way.

Coincident with the setting up of the machinery-process schedule is the improvement in equipment design. This phase of bleach-house modernization will be considered in a subsequent article.

Use of standard batches avoids many difficulties in

By John F. Hotchkiss

Application of Latex

WHEN the textile manufacturer turns to the use of latex as a backing for pile fabrics, he should make every effort to devise a simple and foolproof method of application. If this is done, overseers and operatives who are familiar with the ordinary sizing procedure should meet little difficulty in handling latex.

In the article on compounding (TEXTILE WORLD, December, 1934) it was recommended that the latex and Karaya gum be made up in 400-lb. batches and the filler paste in 1000-lb. batches. One 400-lb. batch of the latex is placed in a steel drum and the amount of filler paste which it is necessary to mix with the latex to make the final compound is carefully weighed out into one or two other steel drums. When the operatives are ready to make the final compound, they need only to empty the one drum of latex into the supply tank and add one or two drums of filler paste, as the case may be. This method prevents the use of latex and filler in wrong proportions.

Friction will cause the coagulation or solidification of latex; therefore, it is impractical to use either a centrifugal or piston pump for moving or circulating the compound. There is available a diaphragm pump designed especially for handling latex compounds. Usually, however, it is possible to arrange for a gravity feed. This may be done by placing the supply tank on a platform 5 or 6 ft. above the size box. The position of this tank is indicated by *A* in the accompanying illustration.

The drums of latex and filler can be easily raised to this platform by means of a tilting cradle on a chain hoist, or, if convenient, they can be emptied through an opening in the floor directly above the tank. Usually the latex is placed in the tank first and the filler paste added to it. If any difficulty is encountered from coagulation, the order should be reversed.

The latex and filler are now agitated for 10 to 15 min. to assure uniformity throughout the compound. Care should be taken not to beat too much air into the mix. Violent agitation over a long period of time also should be avoided. For these reasons, it is well to have a paddle-type of mixer which stirs slowly. After mixing for 10 or 15 min., the paddles should be stopped. If the compound has any tendency to settle, agitation should be resumed for short intervals throughout the run.

The compound is now ready to apply to the back of the fabric. Preferably, this should be done with the surface to be coated on the lower side. It will be noted from the illustration that the equipment is similar to that used for ordinary methods of sizing. In fact, the equipment shown can be utilized for that purpose by changing the rolls at tanks *B* and *C*. For applying latex, the rolls are in the position shown in the sketch. For sizing, rolls *E* and *H* are raised, and rolls *I* and *J* are lowered. Latex should not come in contact with either copper or brass. The roll in the trough *B* may be wood or, preferably, cast iron, which should be left rough so that it will carry the liquid up to the fabric.

In the diagram, a wooden, spiked roller is shown at *D*. This gives tension to the fabric. On each end is a pulley over which hang straps, secured on one end and weighted at the other. By changing the weights, one can vary the tension. This not only controls the finished length of the fabric, but also affects the way the latex goes on. A cast-iron idler roller *E*, which is adjustable vertically, enables the amount of wrap around roll *F* to be changed and consequently the amount of latex applied.

The cast-iron roll *F* rotates against the direction of the fabric in the latex trough. The level of the latex in the trough should be kept to about the middle of the roll. Wide variations from this point will cause inconsistent results. Ordinarily, the roll turns at the rate of 15.5 r.p.m. and is 9 in. in diameter, making a surface speed of 36.6 ft. per minute. The rate of travel of the fabric is 6.12 ft. per minute. This gives a relative speed of fabric to roll of 42.72 ft. per minute. By changing either the roll speed or the fabric speed, one can vary most of the characteristics of the back. An increase in speed will add to the weight per square yard applied. The limiting speed of the roll is reached when the roll travels too fast to pull the compound up to the fabric. If the fabric speed is increased too much, the goods will not remain in the dryer long enough to dry and cure. These speeds will have to be determined for various fabrics by experimentaiton and may have to be changed when different grades of the same fabric are run. The speeds given are suitable for a $4\frac{2}{3}$-row Axminster, either regular or American-Oriental weave.

Cost of compounds for rubberizing pile fabrics

Chemical paste	Lb.	Cost/lb.	Total cost
Water	70.6	$0.000	$0.000
Zinc oxide	16.2	0.080	1.296
Sulphur	5.4	0.025	.135
Zinc dimethyl-dithiocarbonate	2.3	3.000	6.900
Mercapto benzothiazole	2.7	0.550	1.485
Di-beta-naphthyl-paraphenylene-diamine	2.7	1.400	3.780
Sub-total	....	.....	13.596
Freight	....	....	0.110
Total	100.0	$0.137	$13.706

Filler paste	Lb.	Cost/lb.	Total cost
Water	440	$0.0000	$0.000
Caustic	4	0.0415	0.166
Clay	300	0.0033	0.970
Whiting	185	0.0066	1.210
Chemical paste	71	0.1370	9.727
Casein	6	0.1380	0.828
Sub-total	....	.....	12.921
Freight	....	....	1.620
Total	1,006	$0.01452	$14.541

Latex compound	Lb.	Cost/lb.	Total cost
Latex	400	$0.0780	$31.20
Karaya gum	40	0.0038	0.15
Dye	$\frac{1}{2}$	0.8800	0.55
Filler paste	650	0.0145	9.43
Sub-total	....	.....	41.33
Freight (latex)	....	.....	1.30
Total	1,090	$0.0390	$42.63

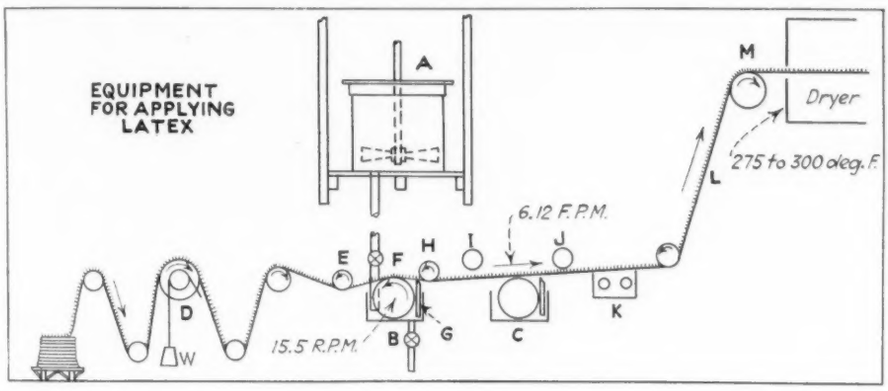
Square-yard quantity and cost

Square yards produced (month)	35,136
Pounds compound used (month)	57,136
Average lb./sq.yd. (month)	1.63
Average cost sq.yd.	$0.0634

The tank *B* should be provided with a large drain in the bottom for flushing out latex remaining at the end of the run. This should be done immediately and with a large amount of water. Otherwise the rubber will coagulate in the drains, stopping them up. One of the various compounds sold for opening plugged drains will sometimes prove effective in removing rubber which has coagulated.

The ledger blade or knife *G* removes the excess compound from the back of the fabric and smooths the portion that adheres. This is adjustable vertically, by which means the wrap, weight, and appearance are further controlled. The roll *H*, which is also adjustable, serves to increase or decrease the effectiveness of the ledger blade. If this roll is kept low, the fabric is pulled tightly over the blade, removing a maximum amount of compound. When the equipment is used for rubberizing, the size box *C* is by-passed, as shown in the sketch.

The steam chest, indicated at *K*, is merely a metal box with a perforated steam pipe running across it. Its purpose is to drive the liquid compound into the fabric to



obtain the binding effect and to smooth the back. Precautions must be taken against using too much steam. An excess will drive the latex through to the face of the fabric and ruin it. This should be checked at short intervals to assure proper functioning. By rubbing the hand over the surface of the goods, one can tell whether or not the latex is penetrating too deeply.

From the steam chest, the fabric passes up into the dryer over roll *M*. It is well to leave an open area near *L*, so that the back can be inspected and defects corrected before the goods pass all the way through the dryer. The roll *M* is the only one to come in contact with the wet back. Trouble is usually encountered at this point, the wet lastex collecting on the roll, building up, and finally stripping off onto the fabric. This roughens the back and smears skin-like sheets on it. Several things can be done to correct this condition. One is to change the speeds and the compound. Another is to coat the roll with milk or paraffin.

The dryer used is about 80 ft. long and is divided into two sections. The first section is automatically controlled at a temperature of 300° F.; the second, at about 275° F. At a speed of 6.12 ft. per minute, any one part of the fabric remains in the dryer about 13 min. Wide variations of time and temperature from these will have to be compensated for by alterations in the curing chemicals mentioned in the previous article. The temperatures given should be considered as maximums. When the goods emerge from the dryer, the back will be completely dried and cured, and nothing further need be done to it.

Many of the difficulties ordinarily encountered in the application of latex can be minimized if proper control tests are used. One of the most essential of these is the coagulation test. To make this, take a small amount of compound on the tip of the middle finger and rub with a circular motion in the palm of the other hand, counting the number of revolutions made until the compound solidifies and crumbles. This number is a rough index of the stability of the compound. Each person will get a different result; but, with a little practice, an individual can establish his own standard. If the compound immediately crumbles, the batch is about to solidify and should be disposed of. This same test can be standardized on a laboratory basis by subjecting a sample to violent agitation and recording the time to solidify. Then a standard for good performance can be set up. The simple hand test should be made every 15 min. through the run.

From the compounder's standpoint, the pH test is of vital importance. The finished compound should have a pH of at least 9 and preferably 11. This may be determined by placing a small sample on a watch glass and adding a few drops of Universal pH indicator. A more exact method is to titrate a sample of the solution with a standard solution of acid, using phenolphthalein as the indicator. This test should be applied to the fillers and filler paste, as well as to the finished compound.

Once proper conditions have been arrived at, the viscosity should be determined and future batches tested to see that they conform to the standard. A simple method of accomplishing this is to fill a separatory funnel to the top with the compound and note the time it takes for the compound to drain into a beaker. This does not correlate with commercial tests of viscosity, but serves adequately as a comparative test for the user. The viscosity may be decreased by addition of water and increased by addition of Karaya gum.

Another test which should be made is an evaporation test to determine the amount of rubber in the latex as received. It is also advisable to carry out a similar test to make certain that the final compound contains the proper amount of rubber.

The cost of compound per finished square yard can be determined by finding the cost per pound of the compound on a wet basis and then recording the amount of compound used and the number of square yards finished for a given period. From these figures, the cost per square yard can be calculated. This method should be used, rather than taking average increases in finished weight, as the latter vary considerably and will not account for the compound which is wasted at the end of a run.

The cost of the compound described in the previous article is detailed in the accompanying table to indicate the approximate cost of rubberizing pile fabrics. These costs were computed several months ago, and the present cost of the various chemicals may have changed somewhat.

No figures for labor and overhead have been included in the above calculations. For all practical purposes it can be assumed that they will be approximately the same as those for ordinary methods of sizing.

Engineer's Bulletin

Reminds overseer of possible economies

MANY of the costs for which the engineering or mechanical department is usually held accountable—such as power, light, water, process steam, etc.—are largely the responsibilty of the overseers of the various production departments. The overseers find these costs intangible so far as their immediate jobs are concerned; and in fact they are usually confronted with them, if at all, only as a rather indefinite part of the overhead with which their departments are charged. The engineer may be thoroughly capable and he may be meeting the requirements of the production departments in the most economical manner; but if the overseers are wasteful and careless, the costs of the various services he renders will be too high.

It is therefore to the best interests of the plant engineer—as well as the overseers and everyone else concerned in the economical operation of the plant—that he enlist the cooperation of the overseers in avoiding wasteful use of his services. To this end he should at intervals issue bulletins to the production departments, reminding them of the need of economy with respect to specific items and also educating them as to the amount of such costs and practices tending to reduce them.

This policy is followed by Richard Dilworth, plant engineer of Lorraine Mfg. Co., Pawtucket, R. I., who says: "The results have been well worth while. Usually the overseers of the present day are so busy that, unless the plant engineer brings these matters to their attention, they give little thought to them. Naturally, the overseers are not especially trained in the problems of the engineering department and it is necessary to resort to some tactful way to educate them. Since the plant engineer has no authority over the overseers, he must confine himself to offering advice." Following are excerpts from three of Mr. Dilworth's bulletins:

Bulletin on Power and Light—In a plant such as the Lorraine Mfg. Co. power equipment represents an investment of something like $750,000. Fixed charges on this investment, plus the labor and material to operate, maintain, and distribute its product, must be pro-rated to every yard of cloth made, and they represent a part of the total cost just the same as any other commodity that enters into cloth manufacturing. You can have efficient power-producing machinery, economically managed; but if the use of its product is not carefully regulated, the power costs of a yard of cloth may rise to a figure which would isolate the product of a mill from a close competitive market.

Power can be wasted so easily that it behooves any foreman of a department to take this part of his job seriously and ask himself such questions as:

Am I operating any motors which are not directly producing material?

Do I start these motors long before they are required?

Do I operate a large motor on a group drive with maybe not 10% of the machinery running, while I could by some other arrangement run more machinery?

Do I stop the motor immediately the day or work is done, or do I let the motor and shafting run waiting for another batch to come along?

Do I waste light by letting any employee put in switches at any time?

Do I use artificial light when daylight is ample for my needs?

Do I use a 150-watt bulb where a 100 would be proper?

Do I shut off the compressed air when not using it, or do I let the hose lie on the floor blowing into space—compressed air which I am told costs plenty? (Tying the handles on compressed-air guns or substituting bobbins for the guns causes unpardonable waste.)

Let us resolve that no power will be used unless its use is necessary for an actual production purpose. When our department is not processing, let us see to it that motors are not turning idle shafting and lights are not burning over idle machinery.

Bulletin on Water—In a normal year, taking 1933 as an example, we purchased from the City of Pawtucket 139,000,000 gal. of water, for which we paid $14,169.90.

In addition to this purchase we pumped from driven wells which are located on our premises 130,000,000 gal., which cost approximately $9,000 for power, maintenance, and the water treatment that is necessary before we can use this well water for our process work.

Our total expense for water, then, was $14,169.90+ $9,000.00, or $23,169.90 for 1933, representing another item which is proportioned to each yard of cloth produced.

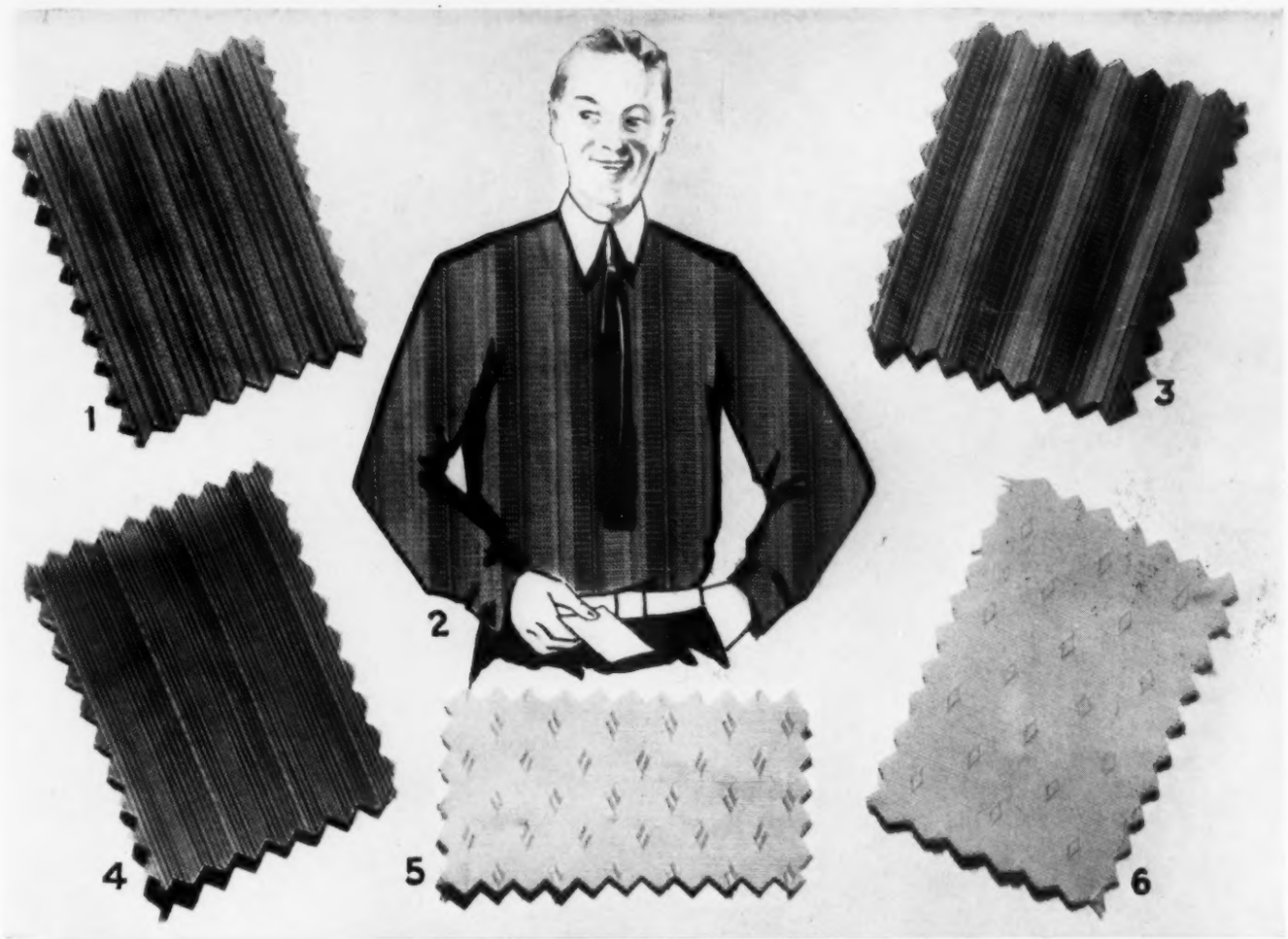
Water being our most common commodity, few realize its value and cost, with the result that a great amount of it is wasted each day through leaky outlets or the willful leaving open of faucets and hose connections or the injudicious use of water.

Every gallon of water wasted represents a gallon of water which has to be paid for, if not to the City of Pawtucket, then for fuel, maintenance and supplies to operate the pumping and treatment equipment.

Bulletin on Room Temperature—An easy way to waste money is to heat a room to a higher temperature than is actually necessary. To do so is often detrimental to a manufacturing process and the employees, for in the case of the latter it causes general discomfort and encourages lassitude. Medical men and investigators have proved, without leaving any doubt, that a temperature of 69° F. with an air condition of 40% relative humidity is ideal for the body and that very active or laborious occupations can be conducted more efficiently at lower temperatures.

When a specific relative humidity is attained in a room having a temperature greater than is necessary, we pay for it in excessive fuel for the heat, higher costs for producing humidity, and excessive maintenance costs on the building. When humidified air strikes an object—such as a water pipe, outside wall, or window sash—which is comparatively colder than itself, the dew point is reached and "sweating" results. The paint is destroyed and the woodwork rots.

Most of our processes can be carried on with room temperatures of 72° F. Occasionally there may be exceptions, and in such cases you have to meet the condition; but usually our waste of heat is due to some fallacy in the reasoning on which the temperature to be maintained is chosen.



Tale of the Shirt

Present chapter finds fancy weaves and woven colors returned to favor

By A. A. Wynn

THE tale of the shirt in these fad-torn days is rather a hectic one. Fads, dominating color, textures, and styles have wrought a tremendous change in the quality of shirtings.

Back in the dim, far-distant past a cotton shirting broadcloth, for example, (or "Silktone," as it was called then) was 37½ in., 144x76, 120/2 warp and filling, fully mercerized in the piece, and finished to resemble closely a fine spun-silk shirting. Through an insidious process of cheapening, cotton shirting broadcloths have come down in construction until, at the present time, a consumer desiring a broadcloth shirt can buy an 80x60 construction with carded 30s warp and 40s carded filling still merchandised and sold under the misused name of "broadcloth."

The writer has seen printed 80x60 broadcloths displayed with a label on the neckband of the shirt reading "Genuine Broadcloth, Made of Imported Egyptian Yarn." If the truth were known, the cotton for this particular piece of goods was probably grown on some Mississippi plantation and made into yarn in an eastern spinning plant, never having been nearer Egypt than the majority of the southern darkies.

It might be well, before we consider the same situation in madras and oxford shirtings, to note a few of the more or less standard shirting-broadcloth constructions branching from the original "Silktone." The first altered con-

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Fabrics are not reproduced in true colors.

1. 100x60, 40s and 35s combed. About 60% color in warp. All plain weave. Colors are dark and light blue, gray, and black.

2. 37 in., 120x60, 40s and 40s combed. Very popular type of striping. Colors are medium blue, navy, and red.

3. Same construction as No. 2. Colors are black, dark gray, light gray, and wine.

4. 37 in., 144x76, 80/2 color and 80/2 in the mercerized stripe, 40/1 filling. Showing use of satin stripe of mercerized yarn for variety. Called "British" striping.

5. 37 in., 144x76, 100/2 warp and filling woven dobby. A beautiful silky fabric. In whites and piece dyes, in a wide range of patterns.

6. 37 in., 124x60, 40s and 40s, combed. White on white dobby. The figure is a warp-float frame with a center of woven filling float, the latter contrasting with the warp float to make an attractive effect in lustrous finish.

7. 38 in., 88x40, 50s and 11½s. Color in the warp, random drawn, weaving 2 as 1. Heather colorings.

8. 38 in., 88x50, 50s and 10s. 50% colored warp, 50% colored filling. Patterned after a color effect typical of worsted fabrics.

9. 38 in., 38x76, 50s and 40s. 66% colored warp, 50% colored filling, woven dobby. Color, dark wine. A good mock-leno mesh.

10. 38½ in., 36x32, 13s and 13s. Woven leno. Very popular for polo and other sports shirts in white and vat-dyed shades.

11. 39 in., 76x60, 30s and 40s. Six harness, mock-leno mesh. This has been one of the most outstanding of the polo-shirt cloths.

12. 38 in., 18x18, weighing about 2.50 to 2.65 yd. Two-ply warp and filling composed of one yarn of medium or hard twist, twisted with another yarn of lower count spun soft with little twist. The "dishrag" type; very good.

structions had the same cloth count, but the yarns were 50/1 warp and filling, instead of 120/2 or 100/2. The quality was subsequently lowered through the following stages:

128x68—40s/40s
120x60—80/2, 70/2
120x60—40s/40s
116x60—40s/35s
112x60—40s/35s
100x60—30s/40s
92x60—30s/35s

to the 80x60 carded 30s/30s, which the Converters' Association has ruled as being the lowest construction that can be called a broadcloth.

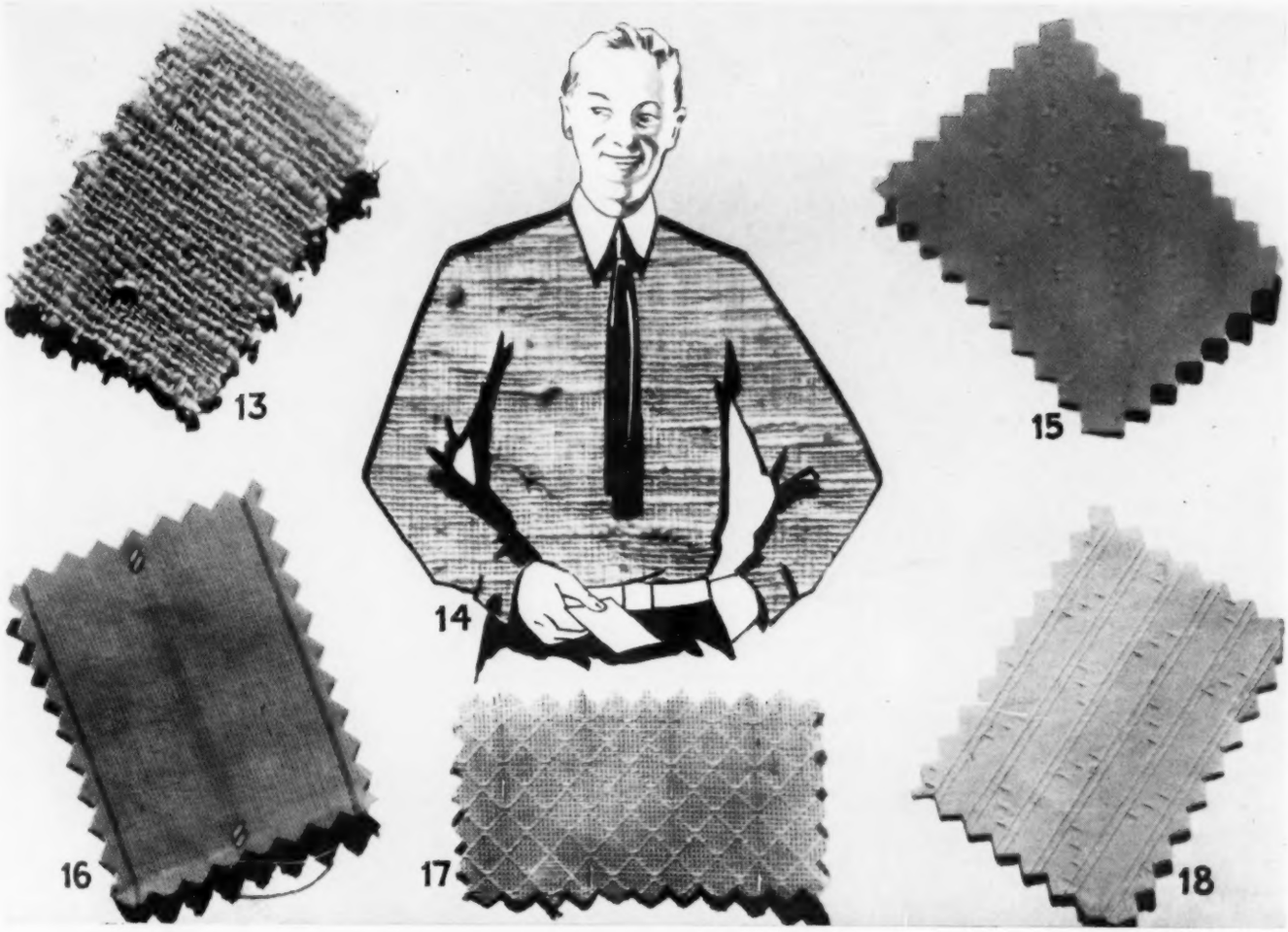
The above constructions have themselves been varied innumerably through slight changes in counts of cloth and in the size and ply of the yarn. One of the outstanding of these variations is the currently popular 136x60, 40s/40s.

With regard to madras, the construction in years gone by stayed within 2 to 4 ends or picks above or below the standard 84x84, 40/1 and 40/1. This standard has been improved upon and, inversely, has been cheapened so that at the present time it has gone as low as 72x72, 40s and 30s. The following constructions are more or less standard and have been used as the basis from which designers have worked out countless beautiful patterns both in light and dark grounds:

104x100—60s/50s
96x100—60s/60s
88x92—50s/50s
84x84—50s/50s
80x76—40s/40s

Chambray wraps on madras constructions are extremely popular at the present time. They have been very tastefully decorated with all manner of both white and colored stripes; neat, colorful clip figures; and small, neat all-over dobby and jacquard effects. This type of styling particularly lends itself to the starched-collar, dressier type of shirt and is the choice of the man who desires a fine, light-weight, colorful shirting. The better, rather than cheaper, constructions have been used for these shirtings, as the solid-warp chambray needs a high count and fine yarns to "look the money." The outstanding requisite of this class of goods is a fine, evenly spun filling yarn, so that the colored ground will be unbroken by slubs, or bars, running filling-wise.

The oxford shirting is still almost a standard, owing to the nature of the weave and the manner in which the warp ends are woven—that is, two ends as one. To cheapen this cloth by lowering the construction below



13. 40 in., 18x18, weighing about 1.75 to 1.80 yd. This cloth, while being basically an osnaburg, has somewhat of a rough linen appearance and shows indications of being popular for sports shirtings. Shown in white, natural (or ecru), and darker vat colors.

14. 38 in., 36x30, weighing about 3.90 yd. Another of the linen-appearing osnaburgs. The corded stripe gives this a "different" appearance, and also shows indication of being good for sports and beach shirtings. Cool and summery.

15. 39¾ in., 88x76, 40s and 35s. Chambray warp; dobby.

16. 39¾ in., 80x76, 40/1 colored warp, 40/2 color for clip figure, 40/1 filling. This is an extremely popular shirting.

17. Same construction and yarns as No. 16. With the addition of an all-over dobby pattern plus the alternating of the colors in the clip figure.

18 to 21, inclusive. White on white dobby madras. A staple item and always in demand.

18. 38 in., 130x112, 60/1 and 60/1.

about 88 to 92 ends of 40s per inch courts trouble, due to the warp very readily slipping over the filling and leaving open spots or "grins."

In today's style trend the aforementioned three—broadcloth, madras, and oxford (with oxford at the present time showing a decided edge over madras)—constitute the backbone of the shirting picture. Needless to say, the variations of weave formation, coloring, and pattern on these different basic constructions are limitless.

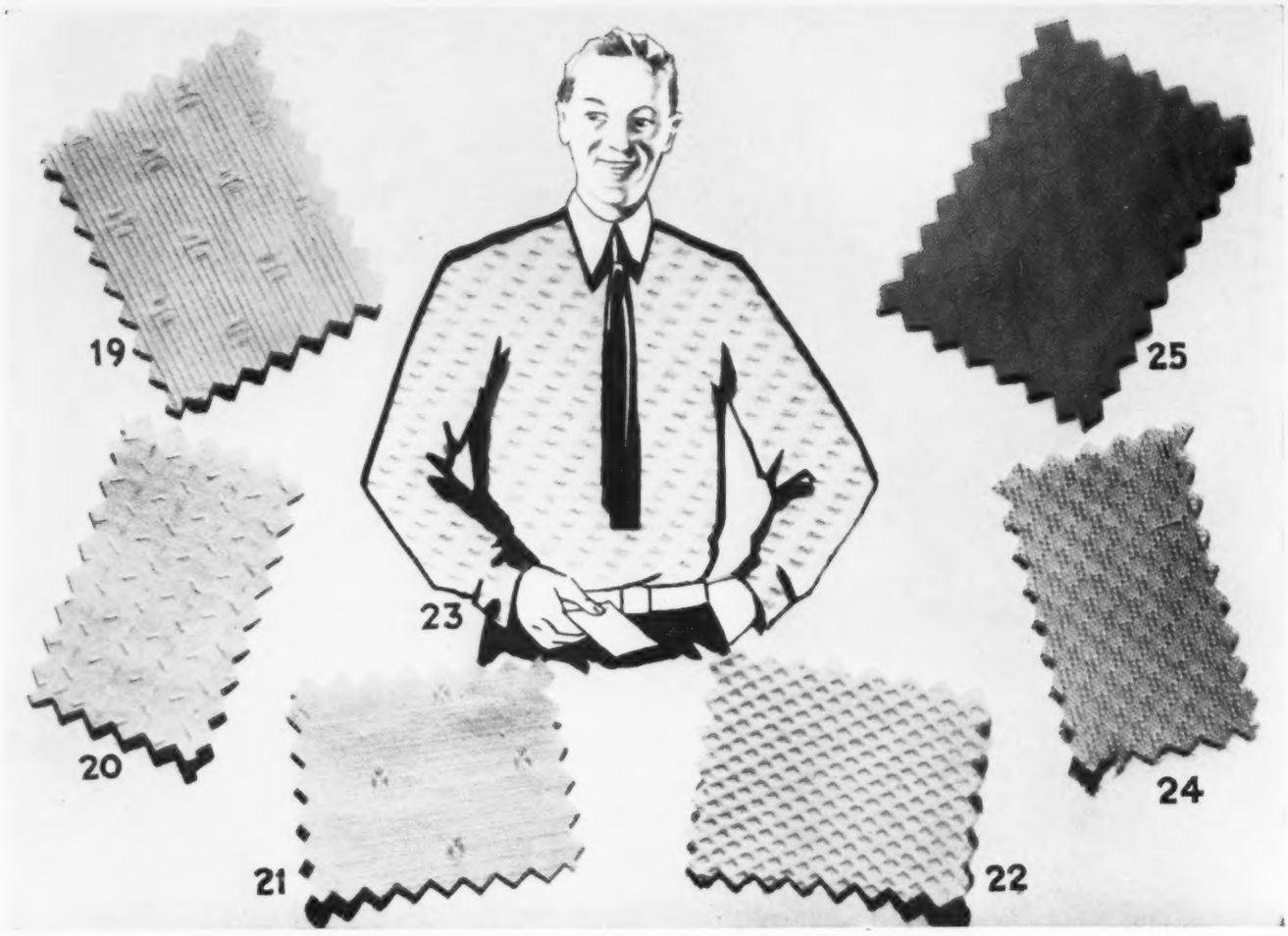
In the broadcloth field stripings are again the predominating style factor. Colors are beng shown that are stronger than ever before. Color combinations are becoming more varied. Designers and stylists are endeavoring to evolve as many different, but at the same time wearable, color combinations as possible. In order to vary the coming British stripes from those which have been made in the past, satin stripes and grandrelle grounds ("grandrelle" is the French name for two-ply white and color twisted warp using fine counts of yarn) have been introduced, with very pleasing results. Due to the manner in which this type of striping adapts itself to the present trend in shirts, it seems as though its popularity will hold for some time to come. In broadcloths, some jacquard effects, neat and closely spaced, in both white and colored grounds, with clipped figures in evidence, are also shown.

Next, of course, comes the ever-present, staple, white on white broadcloth, in a wide range of constructions all the way from 164x84, 120/2 warp and filling, Pima yarn, down to as low as 116 to 100x60 combed, with yarns of different ply and size supplying the variation.

Oxfords come next in our glimpse at the fashion picture. These fabrics have been grasped by enterprising designers and stylists as a fitting medium for their talents, and they have outdone themselves in the development of some beautifully different fabrics. All-over effects and stripes in great variety have been the patterns used the most, running all the way from narrow, widely spaced stripes to ¼ to ½-in. tape or blazer stripes. Some of the narrower tape stripes of oxford weave have been alternated with stripes of open work, leno, or mock-leno weaves to form very novel effects.

The standard oxford ground, solid-color warp, has been supplemented by slub, bouclé, printed, and other novelty yarns. Box-loom-colored fillings have been introduced and, in combination with dobby-woven grounds, have been worked out to produce hound's tooth, shepherd checks, and kindred weaves which, when made into shirts, go well with the current trend in men's woolen and worsted suitings.

Generally speaking, oxfords will always be used more



19. 38 in., 128x112, 60/1 and 60/1.

20. 38 in., 112x112, 60/1 and 50/1.

21. 38 in., 96x92, 50/1 and 35/1.

22. 38 in., 72x100 ground, 108x160 over all, 70/2 and 50/1 peeler warp, 65/1 peeler and 10s filling. Weighs about 2.55 yd. This is one of the most popular patterns of all this type. Used principally for dress-shirt fronts and known as "birdseye."

23. 38 in., 72x108 ground, 108x136 over all. Weighs about 2.90 yd. 80/2 peeler—50/1 warp. 50/1 peeler—10s filling. Popular pattern in the same category as No. 22.

24. 36 in., 80x60, 40/1 warp, 150-denier rayon filling. Woven dobby and sold in white and vat colors.

25. 37 in., 100x60, 40/1 and 150-denier warp, 35s filling. Rayon replacing, and woven dobby. This is the type of rayon shirting that always is in at least small demand. Sold in white and a range of vat colors.

In a later issue Mr. Wynn will discuss printed shirtings.

for the sports or casual shirt, due to their soft, easy appearance and draping qualities.

Certainly not to be forgotten in this resumé are the myriad mesh, leno, mock-leno, lace, and dishrag effects that, according to all style reports, are going to hold a very prominent place in the coming season. These in a sense would come in the same category as the oxford.

For the past three seasons fabrics for sportswear have been gaining in popularity, and the coming spring and summer seasons bring them more to the fore than ever, with colors stronger and more sharply defined, and with textures that are rough and summery looking in the extreme. For this conclusion various style sources have been referred to; and in every instance the writer finds style experts and manufacturers, both of garments and materials alike, of the opinion that these cloths will be the largest volume business of this year. At the "Trade Fair" held at Grand Central Palace, in New York, Feb. 4 to 9, there was noted in the displays of the shirt manufacturers a preponderance of this type of styling, with indications that rough-textured shirtings in darker colors will command a large share of fall and winter business.

For the most part, this class of shirting is being shown in piece-dyed grounds with a smattering of colored yarn. The colors used cover every hue in the rainbow, with canary, royal blue, maroon, and white the most popular shades—in the order named.

Piqués of the high-count, fine-wale variety are being shown for shirts, but they are a little too high priced to enter the volume field. These also are being piece dyed, and the whites and blues are the best sellers.

Rayon shirtings have been noticeable by their absence from the market except at such times as the holiday seasons, when they are sold to meet a small demand for a "flashy" shirt. However, the success of foreign designers and manufacturers, particularly the British, with fine spun-rayon shirtings, has resulted in increased rayon-shirting activity in this country. At the present time there are numerous experiments being made to popularize this class of goods. If the right fabrics can be devised at not too great a cost, they should take very readily here. The time is ripe for a new thought in shirtings, and this seems to offer a logical means to this end.

The foregoing paragraphs have been written in an effort to gather together the "highlights" of the shirting picture. Space does not permit a more intensive and extensive study, due to the multitude of ideas and patterns evolved by the large and active number of stylists and designers. The swatches illustrated have been included in order to show as many as possible of the types mentioned.

ADVERTISING PAGES REMOVED

Development of three-carrier system stimulates demand for

Direct-Running Yarns

By D. S. Chamberlin, D.I.C.
Warwick Chemical Co., West Warwick, R. I.

DEVELOPMENT of the three-carrier system for the manufacture of ringless hosiery has greatly stimulated the demand for direct-running knitting yarns. As a result, efforts have been made in the last few years to produce hosiery yarns which will meet the requirements of the knitter and considerable progress has been made. There are, however, many problems to be solved before the perfect knitting yarn is attained. It is well worth while, therefore, to sum up what has been accomplished thus far and to consider those directions in which it seems probable that further advances can be made.

Prior to the general production of full-fashioned hosiery, seamless stockings were knit from gum silk as received on cones from the throwster. Following the introduction of the full-fashioned machine into this country, the practice of wetting out the yarn thoroughly before placing it on the machine was generally adopted.

The methods ordinarily employed for preparing yarns for the knitting machine after throwing are as follows: backwinding, conditioning (humidifying), dipping, spraying, pressure wetting, hygroscopic treatment, and combinations of two or more of these methods. Hygroscopic yarns were a close approach to direct-running yarns, but due to the fact that their preparation by the throwster often caused a gum-like accumulation on the knitting machine, their adoption was never general.

It is still a question in the minds of many as to just what properties a yarn should have to enable it to be knit satisfactorily without a preparatory treatment by the knitter. There are certain conditions, however, which are generally accepted as being requisite to good knitting with the minimum of two-tone effect and "washboard" appearance. Important among these factors are the following: (1) uniform density or tension of cone, (2) uniform size of yarn, (3) proper mechanical construction of cone, (4) uniform moisture content of yarn at needle-bar, (5) uniform moisture receptivity of the coned yarn, (6) proper twist setting, (7) maximum yarn flexibility, and (8) proper yarn lubrication.

The first three of these factors, and possibly many more not mentioned here, are coning problems. The softer the tension of the cone to that point where there will be no underwind or "sluffing off," the more readily the cone will adjust itself to the atmospheric conditions in which it rests. Cones are being made smaller and smaller at the request of the knitter. It is generally considered that cones for three-carrier knitting should be equal in size and density so as to draw off from the cones through the various tension devices with a uniform pull. Hoffman (*Cotton,* December, 1934) has made a study of the cause of "washboard" effects in ringless hosiery and has explained the care that must be used in cone construction and positioning on the knitting machine.

Fabrics made from direct-running yarn should show no sleaze, should be free from "pinholes," should lie flat on the machine (no shoe-string effect), and should dry out a few inches from the needle-bar. Whether to prepare the yarn in the soaking bath so it favors the soft or the harsh side is still a matter for argument.

Study of soaking treatments to produce direct-running yarns has resulted in an agreement on many of the factors involved. Sufficient oil should be used that will take up in and on the fibers to give ample lubrication and flexibility to the yarn. The best yarns run 26 to 30% finished boil-off. Penetrants are necessary as surface-tension-reducing agents to allow the level wetting-out of the yarn and to pave the way for uniform lubrication and tinting.

Alkalis also are important to soften the silk gums to such an extent that when the oils enter the fiber, the silk gums are lubricated and kept soft to yield continued flexibility to the fiber. Hygroscopic or water-receptive agents are necessary to hold a water content as near normal regain as possible. Emulsifying agents should be employed which give a fine and uniform dispersion of the oil and which do not yield a water-repelling film on drying. To prevent corrosion and pitting of needles, sinkers, and other machine parts, the soaking should yield a knitting yarn which is on the alkaline side.

Hundreds of different formulas are used in the production of knitting yarn. Some are simple, and others are complex. At present it is impossible for the throwster to produce a standard soaked yarn which will meet the particular requirements of each mill, and he finds it necessary to use various formulas to meet the different demands.

Scattering of the yarn by the three-carrier system has resulted in a definite reduction of banded effects. The "pineapple" cone has been accepted as a cone structure which definitely reduces underwind to a minimum, and its use for the finer threads will no doubt be welcomed by the knitter. Considerable thought has been given to wetting-out systems and tensions on the knitting machines, and this has resulted in definite developments in this direction. In addition, the problem of how to produce better "ringless" stockings is being attacked from other angles. It is possible that silk can be so treated that it will knit dry and direct on the machine and result in a superior fabric. Whether the development of new chemicals, or mechanical soaking systems, or a combination of these will be the final answer is a matter of conjecture.

Outerwear Show

Annual exhibit of machines and yarns again proves interesting

ALTHOUGH the aisles and booths of the Knitwear Industrial Exposition held annually at Grand Central Palace, New York, are rarely crowded with visitors, the reason appears to be mainly that the large number of sightseers and curiosity seekers which flock to other textile shows usually do not attend this one. At least many of the exhibitors always report a large number of potentially fruitful inquiries from attending mill men and, in fact, often boast several worthwhile sales. These facts are indications that the small attendance is, from the exhibitors' standpoint, of high grade. With respect to these several matters, the third exhibition, held last month (Feb. 11 to 15), was no exception.

Since circular body machines were this year conspicuous mainly for their absence, it may be considered that the improved flat knitting machines were the features of the show. One of these was a links-and-links model fresh from the new plant of the Robaczynski Machine Corp. in Brooklyn, N. Y. The many improvements noted on the new model included sturdier body, disk-clutch pulley to insure safety of machine in the event of stop-motion failure, jacquard bar capable of skipping more than one card during one complete course, automatic draw-off and collect cams, provision for high- or low-butt sinkers, a double-sinker jacquard system capable of producing varied-colored lace-work patterns without floats (i.e., by tucking), and smoothly operating, unlimited racking.

Improvements on another links-and-links machine, demonstrated by Queens Machine Corp., Brooklyn, included a six-needle rack (a rack for 14 or more needles can be provided, attendants said), positive lock cam and yarn changes with three settings, hexagonal jacquard bar to afford strength and visibility of a coming card, deep cutting of the jacquard bar to knock jacks in as much as $\frac{7}{8}$ in. to prevent their catching and breaking in the lock bar, simple and more positive mechanical stop motion, circuit breaker which stops motor if machine is jammed, high- and low-butt jacks for front needle bed, and solid-rubber take-up rolls for providing a soft and even pull on the fabric.

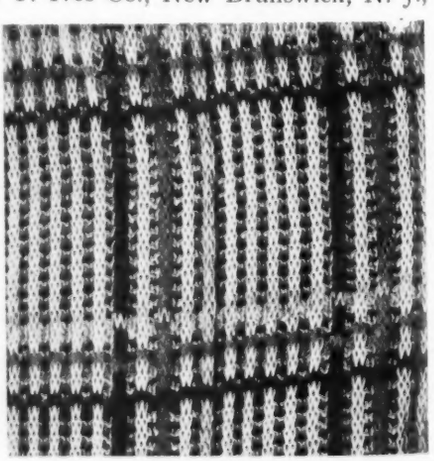
An interesting new design attachment known as the separating cam was demonstrated by the Kretser Knitting Machine Co., Inc., on a circular latch-needle, pattern-wheel, sinker-top, body machine. In effect the device is a floating attachment, but the floats are tied in at frequent intervals (say, every three needles) and hence do not offer objectionably long stretches of yarn on the back of the fabric. It can produce as many colors vertically of the goods as the machine has feeds. Changes in pattern require only a flick of a small lever to throw any separating cam in or out of action. The sample of fabric shown in the accompanying photograph was produced at the show, four feeds being used to knit a woven-type plaid with four colors both vertically and horizontally.

Fidelity Machine Co., Philadelphia, was included among the exhibitors for the first time at an outerwear show. Its exhibit included a multiple-creaser, a braider, a universal three-feed tubing ribber, and a Fidelity-Altemus bottle-bobbin winder.

Of the new sewing machines shown this year, one of the more interesting was a high-speed lockstitch machine announced in February by Union Special Machine Co., Chicago. Features of this equipment include a new method of transmitting the rotary movement from the upper to the lower shaft, which eliminates belts and bevel gears and their vertical shaft; a simplified mechanism for driving the rotary hook; positive feeding motion which eliminates long pitman rods and rock shafts; improved air-cooled and air-cleaned rotary-hook combination; and automatically lubricated rotary-hook raceway. This company also displayed a new edgelock machine with an automatic trimmer for narrow-edge seaming. New equipment exhibited by Singer Sewing Machine Co., New York, included a high-speed lockstitch machine operating at 4,000 r.p.m.; a high-speed, single-needle, automatic oiling chainstitch machine operating at 4,300 stitches per minute; a Model 107-2 machine fitted for blind basting of hems; and a Model 81-SV41 overedging machine for heavy goods. High-speed over-seaming and overedging machines and plain crochet and shellstitch machines for finishing knitted outerwear were featured by Merrow Machine Co., Hartford, Conn. In its exhibit of various types of buttonhole machines, Reece Button Hole Machine Co., Boston, emphasized equipment for making round-cord, reinforced eyelets for bathing suit trunks.

For finishing tubular knit goods, Kasanof Tubular Machines, Inc., Brooklyn, New York, demonstrated the dome steaming and finishing machine brought out a little over two years ago, with which has now been incorporated an upright down-draft dryer designed to correct lengthwise pull of the fabric. Harlem Knitting Machine Co., New York, featured the horizontal steaming and tentering machine shown last year; recently an attachment has been added to this machine which makes it suitable for handling tubular fabrics. Prosperity Co., Inc., Syracuse, N. Y., exhibited a knit-goods press. An improved machine for measuring, examining, and re-rolling knit goods, rubberized fabrics, and other resilient materials was featured by Simplex Cloth Cutting Machine Co., New York.

Needles, sinkers, jacks, and other accessories were exhibited by Loyal T. Ives Co., New Brunswick, N. J., and Torrington Co., Torrington, Conn. The U. S. Testing Co., Hoboken, N. J., demonstrated tests for the moisture and oil content of wool yarn. Some dozen or more exhibits were devoted to knitting yarns, sewing threads, and garment trimmings.



N.A.W.M. Re-elects Arthur Besse, retains machine limitation unchanged

ALTHOUGH the annual meeting of the National Association of Wool Manufacturers, held in New York, Feb. 20, was not open to the press, the fact that watchers in the corridor did not hear the sound of any fireworks would indicate a quiet session. Most important business transacted was the election of officers and members of the Code Authority, the retention, after some discussion, of the same 80-hour limitation on productive equipment; and the submission of the report of the policy committee. In addition, the members heard a further outline of the promotion campaign. Officers elected were:

President, Arthur Besse; vice-presidents, Franklin W. Hobbs, Abbot Stevens, and Millard D. Brown; secretary and treasurer, Walter Humphreys. For the Code Authority, Arthur Besse, Millard D. Brown, Ronald W. Cordingley, Ames Stevens, Frederic W. Tipper, and Harold J. Walter were chosen as principals, and H. M. Ashby, Eugene Bonte, Marland C. Hobbs, and Everett L. Kent as alternates.

The policy committee stated, in brief: Child labor, minimum wages, and hours of work should be matters of federal legislation; the Government should not interfere with or control private business; the budget should be balanced; relief should be placed on a relief basis and conducted efficiently and economically; the gold content of the dollar should be stabilized as soon as possible; the "Reciprocal Tariff" bill should be repealed immediately; employees have the right to form or not to form a labor organization without interference; provisions of the NRA should be altered only as prescribed therein; the right to work is as fundamental as the right to strike; the industry, in order to survive, must avail itself of the developments in science and invention; representatives of organized employees should have definite legal responsibility for their own acts, for the acts of their organization, and should be required to publish proper financial statements; the industry is opposed to the issuance of executive orders of either a general nature or those referring specifically to the wool industry which have the effect of altering or amending the Code.

In his address, Mr. Besse stated, in part:

I am still of the opinion that the industry's greatest need is for more intelligent merchandising. It is impossible to continue indefinitely selling goods at a loss. We are embarking on a promotion program designed to increase the sale of wool products. Industry promotion needs to be backed by sound merchandising and by adequate quality standards.

The period just ahead of us is full of possibilities of many sorts. The mere mention of some of them is sufficient to bring home to all of you the vital necessity for united and definite action on the part of the industry. I particularly ask you to consider the possibilities of the following:

1. The Senate and House bills providing for a compulsory 30-hour week.
2. Legislation providing for a continuation of NRA with certain alterations.
3. Possibilities of reciprocal tariff treaties.
4. Obvious necessity of new tax legislation.
5. Possibility that present dissatisfaction with existing labor legislation may result in new bills drawn by people who, though well intentioned, do not understand the inherent difficulties.
6. Problem of the control of the price of wool. Should the present methods of control continue or should they be abandoned and if so when?
7. Necessity of establishing standards to provide against misrepresentation of our goods after they leave our hands and to protect the public against the use of inferior substitutes.

Outerwear's Record Dinner

Concludes convention-exposition week

OBSERVANCE of "Knitted Outerwear Week" in New York last month left onlookers with the conviction that a new era of confidence and prosperity is opening for this industry. Although certain sessions of the National Knitted Outerwear Association convention drew only a modicum of attendance, the industry's annual dinner at the Astor Hotel attracted a crowd of nearly 1,000 manufacturers, smashing all banquet records for this division and challenging in size the greatest get-togethers of the major textile branches.

Outerwear knitters, already rushed with spring business, found the many-sided program of "Outerwear Week" a strenuous five days! Hundreds of knitters sped busily from the Knitwear Industrial Exposition at Grand Central Palace to the association convention sessions at the Astor, back again to the Palace for the Code Authority meetings, and back to the Astor for dinner.

Out of it all came many constructive suggestions and much clear thinking. The tendency of outerwear mills to view chain stores as an outlet only for low-end merchandise was criticized as inefficient by R. G. Parker, advertising manager, W. T. Grant & Co., addressing the opening session of the convention at the Astor, Feb. 12. Other speakers were August Egerer, president of the association; Mason Barloy, president of the Credit Clearing House, and ex-Gov. William E. Sweet of Colorado. Governor Sweet discussed the N.R.A.—thus paving way for the Feb. 13 session of the convention at which the Administration's social security program was explained by Abraham Epstein, secretary of the American Association for Social Security, and criticized by J. J. Phoenix, president Bradley Knitting Mills and former president of the outerwear association. Mr. Phoenix favored social insurance, but regretted its political aspects.

I. P. Cohen, president, Knitwear Institute, described the fashion shows held by that body and asked association support for the institute, which support Harold A. Lhowe, executive director and counsel, said the association was not yet ready to officially pledge. However, Mr. Lhowe agreed there was need for prompt action of a promotional nature, and pointed out that the potential market for outerwear far exceeds current sales. Likewise, Sidney Korzenik, association secretary, in his annual report cited "clarification of distribution" as a foremost 1935 need of the industry. The need for further effort to reduce peaks and fill in valleys in the industry's seasonal employment was stressed by Mr. Lhowe in a discussion of production problems.

The Outerwear Code Authority on Feb. 14 held "open forum" for the industry at the Palace, and the chief points stressed by manufacturers were for an increase in learned percentage and for additional overtime allowance.

Overseers'

THIS DEPARTMENT

is a feature for overseers which is in effect a combination of our "Overseers' Round-Table" and "Kinks and Wrinkles." It covers, however, a broader field, including as it does useful material which would not have found a place in either. We will feature a superintendent's diary in which readers will find practical hints on various matters taken from actual mill experience. Also included are brief items of value from various sources, correspondence from readers and kinks that have actually solved some problems and may help in meeting yours.

▼

A SUPERINTENDENT'S

(Based on actual mill notes)

A number of times while walking around the plant I noticed people go here and there who I was quite sure didn't work here. Now I'm not worried about someone sneaking in and putting a bomb somewhere, but everyone knows that the operatives are distracted from their work when strangers are wandering about, so I brought the subject up at one of the overseers' meetings.

It developed that the people I noticed were there for one of two reasons. In the first place, quite a number of the help had someone bring their lunch in. Again, when someone applied at the office for a job he or she was sent out to the mill to see the overseer.

The first point was cleared up pretty easily. Naturally we didn't want to make any hard and fast rule that would prevent the operatives who lived at a distance from having a warm lunch brought in to them, but on the other hand we didn't want the mill wide open so that folks who had no business in the plant could walk in any of the gates around lunch-time and wander about as much as they pleased. After all, every mill has some styles or gadgets that are just as well kept from prying eyes. The remedy was to keep all the gates closed except the one down by the boiler room. The engineer could look out his window and see whoever was

On Punctuality

Editor, Overseers' Corner:

Yes, the average overseer is not always punctual in dealing with his operatives, and it is a grave mistake. Superintendent Chase has brought up a point that is vital if an overseer wishes to gain the respect of his men. Yet how often it is overlooked! Lack of punctuality denotes slipshod management. To keep an operative waiting to show his chief a second, or dye sample, or a broken machine part is inexcusable. When an operative stands around it means a loss to all concerned. The operative will not be so ready to consult the overseer next time, the morale in the room is lowered, and the mill loses heavily when the operative is not on his job.

To go a step further, the overseer should not treat the operative as an intruder, but as a fellow workman, who, with his chief, is trying to turn out the best work possible. Confidence and consideration breed goodwill.

All this sounds obvious. Yet how often it is forgotten. The mill, the overseer himself, and the operative all stand to gain when the overseer is punctual and considerate.

T. D. F.

Overseer Should Set Good Example

Editor, Overseers' Corner:

No, there is no reason why Pete should apologize when he keeps an operator waiting, but he should not keep him waiting.

An overseer is not responsible to his help any more than the owner is responsible to his overseers; but, if he wishes to have and to maintain discipline with his help, he must set something of an example.

If the mill starts work in the morning at seven, he should not come in at seven o'clock or after, but he should be there at least ten minutes in advance. Again, should the overseer make an appointment with an employee on some branch of the work, he should keep it so that the proper morale among the help may be maintained.

It is just as easy to always be on time as it is to be a few minutes late.

WILLIAM E. HERRICK.

How to Please the Superintendent

Editor, Overseers' Corner:

After reading the first part of "A Superintendent's Comments on Overseers," I would say that the writer has only covered about half of the ground.

With regard to what is required to please the superintendent, I would say maintaining a high efficiency in production and good quality with a minimum of cost would be satisfactory in most cases. But that is not enough.

Every department should be kept clean at all times. How often are we confronted with material and supplies lying about and causing congestion so that the help cannot operate at their highest efficiency? It is just as easy to form the habit of having everything in its place as it is to put things everywhere. Rather than have a definite time for inspection, wouldn't it be fairer to all department heads to have unscheduled visits from the superintendent? This would mean a clean mill at all times and not just a cleaning contest for Saturday morning.

By taking care of such matters I think the superintendent would be pleased, but what about reversing the process and having the superintendent please his overseers once in awhile? We are all human and if results are gratifying why not a little expression of appreciation every so often? It would create an incentive to do even better work. Instead of that we are all prone to accept good records as a matter of fact, but when something goes wrong the responsible party gets a good reprimand. A little human kindness goes a long way, and in cases of handling help I find it pays dividends.

Weekly meetings impress me as beneficial to the successful operation of any plant. Here we can discuss various problems that arise and analyze the particular trouble. This eliminates the habit of passing the buck.

BILL K.

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KINKS

Colored-Twist Yarns

A mill making twist yarns had considerable trouble with off-shade filling and many cuts were rejected. Apparently one bobbin would be light and the other dark, although spun on the same frame with

Corner

COMMENTS ON OVERSEERS

By John Williams

coming in. As the same people brought the lunches day after day, he soon got to know them, and if a stranger showed up he could step outside and find out what was what. Of course, in a large plant you would want two or three entrances so guarded for convenience.

When we took up the problem of the overseers interviewing help there was much argument. In a plant the size of ours it isn't practical to have an employment officer, and each overseer seemed pretty sure anyway that he wanted to interview the help personally. When I suggested that possibly the overseer come out to the office, a great howl went up that it would be wasting too much time. I could see the point, but what I didn't like was a parade of outsiders going through the plant, particularly when we weren't putting on any help. They answered that even though we weren't hiring anyone it was necessary to see the applicants so that they could get in touch with the good ones when wanted.

Well, we went back and forth and didn't seem to get anywhere, so I finally told them that everyone was to think about it for a time and that we were going to settle the problem at our next meeting if it took all day. I'm curious to see how it will turn out.

CONTRIBUTIONS

to the "Overseers' Corner" will be paid for without regard to length. We will be glad to use letters discussing the super's diary or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you—contribute something to them to interest others.

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double roving in the creel, one bobbin being black and the other white.

The mill had single trumpets on the spinning frames and investigation showed that in some cases the black roving lay on the right-hand side of the white roving as it passed through the spinning rolls, while in the other cases the black roving lay on the left-hand side. Thus either the dark yarn was being twisted around the white, or vice versa. Each produced a different color that was noticeable when the fabric was woven.

By replacing the single trumpets with double trumpets, and keeping the black on the same side of the white at all times, the trouble was eliminated.

H. (N.C.)

Hot-Water Supply For Dyeing Machines

We found that a considerable amount of time was wasted in the dyehouse in heating the water. With certain machines it took no less than 15 min. to bring to a boil, by blowing in live steam, the water used in dyeing or washing. The time was considered a waste and a remedy sought.

The answer proved to be simple and effective. A large tank was placed above the level of the dyeing machines. Into the tank was run a water supply and all the waste and exhaust steam from the various steam engines used throughout the plant. Pipe lines from the tank were led to the various machines so that when a wash or dye liquor was required the machine was filled with water about 50° C., and not cold water. The production of the dyehouse automatically increased as a result of the change.

F. B. Wick.

Clip Marks on Cotton Fabric

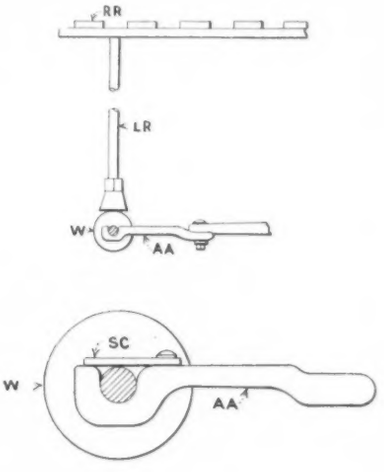
When a mercerized cotton fabric is dyed with direct dyes, it sometimes happens that the selvages absorb the color to a lesser extent than the rest of the fabric, and that these lighter parts have the shape of the mercerizer clips. In an experience of this sort which the writer had, the trouble was traced to water adhering to the mercerizer clips after they had passed through the wash spray and returned to carry the caustic-impregnated fabric forward. The water on the clips apparently diluted the caustic in the fabric to such an extent that full mercerization did not take place and these spots therefore had a lesser affinity for direct dyes.

The difficulty can be overcome by having a jet of compressed air blow on the clips as they return from the remote end of the mercerizing machine. The adhering water is thus blown off and the selvages are as well mercerized as the body of the fabric.

F. W. Berwick.

Clip for Lifter-Rod Wheel

The small wheel *W* on the adjustable lifter-rod arm *AA* of ply-yarn twisters is sometimes forced from its position. This may happen during sweeping, mopping, or sometimes when a low truck or other ob-



ject comes in contact with the wheel or adjustable arm.

Displacement of the wheel causes the lifter-rod *LR* to drop down on the arm *AA*, thereby lowering one end of the ring rail *RR*, and permitting the yarn to wind over the bottom of some of the bobbins. A tangling of these bobbins ensues, and considerable waste is often made before the bobbins are properly repaired. Further, the operator loses valuable time fixing the bobbins, and there is always some loss of production before the trouble is patched up.

A simple, inexpensive, but effective remedy is to fit a small spring-clip *SC* to the adjustable lifter-rod arm *AA*. Originally, a clip was fastened on each side of the wheel support, but a trial soon proved that one clip was sufficient to prevent the wheel from being forced out of its position.

L. L. K.

QUESTIONS AND ANSWERS

Flake and Nep Yarn

Technical Editor:
I am inclosing a clipping of a flake cloth. Have you any information as to how this is produced? We have made a nep yarn cloth here, but our method does not give quite as clear cut a nep as that in the inclosed sample. (8135)

If you are familiar with producing neps and flakes, it ought to be easy for you to reproduce the yarn in question. It involves simply a "spun flake" combined with neps. It appears to us that the effect in the cloth of both prominent neps and faint-appearing neps is obtained by the variable amount of twist inserted in the yarn. This is due to the principle of twisting, which in all cases is as follows: In yarns of uneven diameter, an excess of twist is found in that part of the yarn which is thinner, and a corresponding shortage of twist is found in the part which is thicker. In other words, twist always seeks the thinner parts of the yarn.

Applying that principle, you will note that the thick places in the yarn from this sample contain very little twist; consequently the black neps appear prominently. In the thinner parts the black neps are twisted in the core of the yarn and are less prominent.

The flakes are not heavy and hardly show on the cloth. Therefore, it is evident that their only purpose is to produce an unevenly twisted yarn.

We are of the opinion that this yarn was produced on jack speeders. The neps are long and probably were made by mixing a relatively small quantity of very badly roped, or stringy-dyed cotton from the dyehouse, with white cotton. This mixing takes place in pickers.

▼

Dry Marks on Carpet

Technical Editor:
We are weaving plain velvet carpets using a stock-dyed wool face. On certain of the colors we are having trouble with dry marks when the loom is left standing any length of time. We shall appreciate your advice as to how we can eliminate these marks. (8189)

All looms that are weaving colored yarns and are obliged to stand for any length of time should be covered by a dark cloth. This will prevent the fading caused by sun and daylight; and, if the weave room is hot, it will prevent loss of some of the moisture in the yarn. Also, in the case of a damp weave room the cloth covering may prevent mildewing of the yarn.

The reed in the looms should be well covered to prevent the wires from rusting. In a damp weave room a reed will rust in a few days.

The best procedure in a case of this sort is to weave to the end of the rug and then cut out the cloth before letting the loom stand. When the loom is started, a little plain cloth can be woven until the loom is warmed up. All looms that have been standing for some length of time make some sort of mark when they are started. The hygroscopic property of wool, one of its most marked physical properties, is often the base of the

trouble. Under normal atmospheric conditions, wool will be found to contain about 14% of its weight of moisture, but if the atmosphere is exceedingly damp it may be found to contain up to 33% of water. In a warm, dry weave room the moisture will drop to as low as 6 or 8%.

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Blotches in Hosiery

Technical Editor:
We are inclosing a pair of 42-gage, 8-thread, full-fashioned, pure-silk hose. At the heel, marked with a pin, you will notice blotched white or shaded spots which we seem unable to control in this line only. We shall appreciate your advice as to the cause of this defect and its remedy. (8131)

Examination of the samples does not permit us to express a definite opinion as to the cause of the defect. We believe, however, that the main cause of the trouble is a lack of penetration of the dyes employed. It is possible that your production is mainly of lighter construction which permits satisfactory dyeing without the aid of a penetrant or assistant in the dyeing operation. We note that the union of color between the cotton and silk of the pair of stockings submitted is rather poor, and that the first two or three courses of the cotton fabric at both heel and welt are much lighter in shade. We also note that there is very little color in the back seaming thread. It is our opinion that the color in the back seaming thread and cotton top and foot has been reduced by employment of acid in the dyebath or by some acid finishing compound.

It is a well-known fact that where acid is employed in dyeing or finishing silk and cotton goods there is a strong tendency to drive the dyes from the cotton to the silk. Very possibly this is responsible for the lighter tone or streak of two or three courses at the junction points between the silk and cotton. Naturally the transfer of color is more easily accomplished at this point. We believe the white spots are due to a lack of penetration of dyes.

To correct the trouble, we suggest that definite action be taken to see that the heels of the gray goods are thoroughly turned out by the gray-goods inspectors. That is, make sure that both heels and toes are not in a folded or tucked-in condition when they are entered in the dyebath. Also make certain that sufficient time is given for the thorough wetting out of the goods before dyeing is started. We also suggest that some penetrant or wetting-out assistant be used. Finally, we would avoid, as far as possible, the use of acid in the dyeing and finishing baths.

Washboard Knitting

Technical Editor:
Inclosed is a stocking which has a streaky or washboard effect all through. This also shows when the stockings are finished. All of our high-twist yarn used in three-carrier knitting shows this. The knitter claims it is due to our throwing. Can you tell me what causes this defect? (8170)

Your fabric is an outstanding example of the washboard effect peculiar to and very general in three-carrier knitting. This effect is only remotely a throwster's trouble. We are of the opinion that at least 90% of the washboard fabric in three-carrier construction can be definitely traced to unevenness in the silk or, to be more specific, to differences in the diameters of the three silk threads employed in making the fabric.

There are contributing factors to the production of washboard effect, such as uneven tensions on knitting machines, at the snappers, wicks, and other attachments used in connection with wetting the silk as it is delivered from the cone to the needle. The condition of the tension or wind on the different cones of silk can be another factor. It is important that the silk be wound with as uniform tension or density as possible. It is also important that the cones on the machines be kept as nearly uniform in size as possible and so located on the yarn table that each individual cone will yield uniform tension or drag as the silk is delivered from it. There are also other mechanical adjustments on the machine, such as slur-cock, verge plates, etc., familiar to any good machine adjuster, which can play some part in producing washboard knitting.

After the knitter and throwster have done all that it is possible to do toward the elimination of washboard knitting, there will still be a monumental amount of washboard effect in three-carrier fabric, no matter how high the grade of silk employed may be, and 90% can be traced to uneven silk.

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Unevenness in Silk Yarn

Technical Editor:
We inclose a skein of 2-thread 13/15 Japan 85% organzine showing uneven color. We should like to determine whether the dyer or throwster should be held responsible for the unevenness which seems to run in veins through every skein in a 16-lb. lot. We are also submitting a skein of the gum silk which shows a similar veining. (8185)

We have examined the samples of undyed and dyed silk yarn to ascertain the cause of the streaky appearance in the dyed sample. All of the evidence goes to show that the cause of streakiness or unevenness in the color of the dyed sample originated before the yarn went to the dyehouse. An examination of the twist count in various portions of the yarn shows that the variation in twist is no more than normal, and this variation would not be responsible for uneven dyeing. The odor of the undyed yarn indicates that some of the materials

QUESTIONS AND ANSWERS

used in soaking or processing this yarn have oxidized and turned rancid. A Kriest test further substantiates the fact that there is present in this yarn oxidized and rancid oils.

In view of the fact that the skein was cross-reeled and the yellow portion goes completely around the skein, it appears that all the silk in the skein has not been subjected to the same soaking (or is from different chops or lots of silk). This indicates that the two different portions of the skein came from two different soaking baths, one less satisfactory than the other. It is possible that one of the two threads was reeled continuously from one lot of silk and that at a change of bobbins the other thread was changed to silk from another lot, as this would cause sufficient difference to make the entire yarn appear to be altered. Although we believe that this is the answer to the problem, you could have our opinion checked by authorizing a testing house to extract the oil and soap from both portions of such a skein and make a comparison of the results. On a skein which has not been subjected to the amount of experimentation which these have undergone, it would be well to look for a knot dividing the two portions of the skein.

It is probable that if the dyer had been acquainted with this information, he might have been able, by means of extra processing, to turn out these skeins perfectly uniform in color. In order for the dyer to do this, it would probably be necessary for him to give this yarn an extra boil-off followed by a good bleach which would have a tendency to oxidize the silk uniformly throughout and thereby produce a uniform bottom on the skein and thus permit the dyestuff to be taken up by the yarn evenly and uniformly. Inasmuch as this would entail extra expense and labor on the part of the dyer, and the results might not turn out absolutely satisfactory, the dyer should not be held responsible if it does not turn out perfectly satisfactory to the owner of the yarn.

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Hosiery Defects Due to Carpet Beetle

Technical Editor:
We are inclosing two 45-gage and two 39-gage stockings. Will you kindly inspect this hosiery and advise us the cause of the holes in the legs. (8127)

Examination of both the 45- and 39-gage hosiery showing small defects in the legs, indicates that the damage is undoubtedly the work of the black carpet beetle. Roaches will cut raw silk fabric in a similar way, but usually the damage has a more jagged or rougher appearance than when it is done by the moth. Also, roaches leave other identifying marks, such as specks, which are not shown on the samples submitted.

It is the larva of the carpet beetle that does the greatest damage. We advise you to make an immediate and

careful inspection of any stock of goods which you may have stored in gray-goods bins. Likewise, we emphasize the importance of becoming alarmed over the damage of even a few pairs of hosiery, as serious trouble can and will develop rapidly if the moths are not destroyed.

In recent months several articles have appeared in TEXTILE WORLD and other textile magazines on the subject of the black carpet beetle. In these articles has been brought out the need for speedy action when trouble is encountered which is traceable to the ravages of this insect. We might add that a bulletin thoroughly describing various carpet beetles and methods of control may be had by addressing U. S. Department of Agriculture, Washington, D. C., calling for Farmer's Bulletin No. 1346.

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Calculating Warp Contraction

Technical Editor:
While looking through your "Cotton Mill Handbook," I noticed that the rule given for figuring warp contraction from a cloth sample differs from the one I was taught in school.

Your rule: "Divide the difference between the lengths of the end and the cloth by the length of the cloth."

The rule I was taught: "Divide the length of the end into the difference between the lengths of yarn and cloth."

Example in Handbook: "If an end from a piece of cloth 3 in. long measures 3.25 in., what is the percent to allow for contraction on the cloth?

"3.25 — 3 = .25 difference in the length of the end and cloth.

".25 ÷ 3 = .083, or 8.3% contraction."

Using the rule I was taught:
3.25 — 3 = .25 difference in the length of the end and cloth.
.25 ÷ 3.25 = .077, or 7.7% contraction.

We were taught that, when the end is taken from the cloth and the contraction removed, the length obtained is the amount of yarn required to produce the piece of cloth as long as the sample. Therefore, in figuring the contraction, we used the original length of yarn, instead of the length of cloth, to divide into the difference of the two lengths.

I can see, by your rule, that the length of the end, which is 3.25 in. is 8.3% longer than the cloth; however, I contend that the end, 3.25 in. long, contracted 7.7% to produce the 3-in. piece of cloth.

I shall appreciate a reply advising which is the correct way of figuring this. (8151)

Although at first thought your method of calculating contraction appears more logical, the method given in our handbook is the one commonly employed. This is due to the fact that it gives a figure more simple to use in the subsequent calculation without in any way impairing the accuracy of the ultimate result. In other words, the purpose of estimating the contraction is to determine how much more yarn will be needed to reproduce the fabric than would appear from the fabric dimensions.

Suppose, for example, the yarn measures 3 in. when contracted and 3.25 in. when pulled out. If we use the 3 in. as 100%, it is necessary only to add .083 to 1.00 to obtain the factor 1.083 for calculating the amount of yarn we must spin or buy. If we took the figure 3.25 in. as 100%, we would have to deduct .077 from 1.00 and divide 1.00 by the result in order to obtain the same factor, 1.083. Naturally, the simpler calculation is the more popular.

Perhaps logic would be appeased if we called the figure 8.3% the "expansion" rather than the "contraction," since in reality it is the amount the contracted yarn expands. We recommend to textile schools that they adopt this terminology in teaching students.

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Lint on Knitting Machines

Technical Editor:
We operate circular knitting machinery, using cotton and wool. The lint that is thrown off from these yarns falls into the needle and sinker slots. Periodically the machine must be taken down and cleaned with a wire brush or a hacksaw blade. This cleaning operation takes practically three-quarters of a day for one man. We should like to know if there is any chemical solution which will dissolve all of the lint that accumulates in the slots of the cylinder. (8179)

We know of no chemical solution which will dissolve this lint without seriously injuring the metal in the knitting machine. Of course, you could dissolve the wool with caustic soda and not injure the cotton, and you could remove the cotton by the use of acid; but the caustic soda solution and the acid solution would blacken your needles and etch or roughen them.

Many knitters find that they can keep their machines fairly free from lint by the use of a good, high-grade needle oil, applying it to the needles by means of a spray or brush two or three times a day. This needle oil should be applied to the needles between cuts, as the excess needle oil is taken up by the fabric being knit, and too much of this oil will cause difficulty in the subsequent dyeing and finishing of the goods. Consequently the needles are oiled just before a cut is being taken off, and the oil-soaked portion of fabric is discarded.

We know of one mill which has been following this method for many years. Executives of this mill state that they never have to tear a machine down to clean it out. We might add that this concern helps to prevent the tendency of woolen yarn to fuzz and allow lint to fall into the machine by winding the yarn onto cones or bottle bobbins. In this winding process the yarn passes over paraffin disks which provide a certain amount of lay to the fibers and materially assist in preventing the formation of lint. Paraffining the yarn and the judicious use of needle oil prevent undue cleaning in this plant. We know that there are a number of other plants operated in the same manner which never experience extreme difficulty from lint.

THE PERSONAL PAGE

James W. Cox

W. Ray Bell

Walter C. Taylor

K. B. Cook

Smith Crow

P. H. Bonner

James W. Cox, Jr., of Iselin-Jefferson Co., New York, has been elected president of the Fitzgerald (Ga.) Cotton Mills, succeeding **Floyd W. Jefferson.** Mr. Cox continues of course to make his headquarters in New York.

W. Ray Bell was re-elected president by the board of directors of the Association of Cotton Textile Merchants of New York, March 5. The following officers were also re-elected to serve for the present year: vice-president, **Harry L. Bailey,** Wellington Sears Co.; treasurer, **John C. Hughes, Jr.,** McCampbell & Co., Inc. New directors of the association, elected at the recent annual meeting to serve until the annual meeting in 1938, are: **Walter S. Brewster,** Pacific Mills; **Elroy Curtis,** Southeastern Cottons, Inc.; **William D. Judson,** Parker, Wilder & Co.; **George M. Miller,** Turner Halsey Co.

Maclin P. Davis, son of **Norman H. Davis,** U. S. ambassador-at-large, has been made president of Se Ling Hosiery Mills, Inc., Nashville, Tenn. To accept this position, he resigned as vice-president of American National Bank.

Howard Coffin, chairman, Southeastern Cottons, Inc., has been elected a director of Textile Export Association.

W. W. Bricka, general manager of Monument Mills, Housatonic, Conn., has also assumed the duties of treasurer, succeeding **Delano deWindt, resigned.**

Windsor B. Day has been elected president and treasurer, **Morgan G. Day,** vice-president, and **A. T. Messon,** assistant treasurer of Hodges Carpet Co., Indian Orchard, Mass.

Charles S. Henerey, for 14 years prominently connected with the Santee Mills, Orangeburg, S. C., has been elected president of the company.

Frederic L. Babcock, editor of *Fibre & Fabric,* Cambridge Mass., was given a testimonial dinner at the Narragansett Hotel, Providence, R. I., last month on his completion of 25 years as editor of his paper. More than 200 attended.

W. R. Odell, treasurer of Kerr Bleaching & Finishing Works, Concord, N. C., who has been identified with the cotton-textile industry of North Carolina for over 50 years, celebrated his 80th birthday on March 3.

John L. Fawcett of the designing and weaving department New Bedford (Mass.) Textile School, succeeds **Lewis G. Manning,** resigned in the knitting department of the school.

Walter C. Taylor, at one time secretary of the Southern Textile Association, has been appointed technical advisor to the Textile Labor Relations Board, Washington, D. C.

Kenneth B. Cook, technical manager of Manville Jenckes Corp., Manville, R. I., has been elected vice-president in charge of manufacturing. Mr. Cook is prominently known among technicians in the industry. Among his various activities has been his work with Committee D-13 of the American Society for Testing Materials. He was secretary of that committee from 1924 to 1928 and vice-chairman from 1928 to 1932. He has also served as member of the executive committee of the parent society.

William C. Appleton, general sales manager, and **Frank H. Griffin,** general manager of all plants, have been elected vice-presidents of the Viscose Co., it was announced March 11. These executives have been directors of the company since May, 1933.

Robert H. Spare, acting general manager, Pendleton Mfg. Co., LaFrance, S. C., has been made general manager. **Francis X. Minich** and **John C. Fay, Jr.,** are assistants to Mr. Spare.

Textile Calendar

Southern Textile Exposition, Eleventh Annual Exhibit, Textile Hall, Greenville, S. C., Apr. 8 to 13, 1935.

American Society of Mechanical Engineers, Textile Division, meeting with Greenville Section, Greenville, S. C., Apr. 10, 1935.

Southern Textile Association, annual meeting, April 12, during Southern Textile Exposition at Greenville, S. C.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, Pa,, Apr. 22-26, 1935.

National Association of Hosiery Manufacturers, annual meeting, Philadelphia, Apr. 24, 1935.

Underwear Institute, annual meeting, Philadelphia, Apr. 25, 1935.

American Cotton Manufacturers Association, 39th Annual Convention, Bon Air-Vanderbilt Hotel, Augusta, Ga., April 25 to 27, 1935.

National Cotton Week, May 6 to 11, 1935.

Cotton Manufacturers Association of Georgia, annual meeting, at The Cloister, Sea Island Beach, Ga., May 16 and 17, 1935.

Paul H. Bonner, who retired in 1931, has returned to Stehli Silk Corp., New York, to act as merchandise advisor.

Smith Crow, superintendent, Drayton Mills, Spartanburg, S. C., chairman of weavers' division, S.T.A., presided at the recent spring meeting.

Paul Boehm, formerly superintendent of the worsted division of Lorraine Mfg. Co., Pawtucket, R. I., has been named general manager of Hamilton Woolen Co., Southbridge, Mass., recently purchased by J. P. Stevens & Co. interests.

Herbert Burrow has been made manager of Bonham (Tex.) Cotton Mill, succeeding the late J. C. Saunders.

Chicago Yarn Men's Circle has elected the following officers: **Charles F. Peffer,** president; **C. Walter Seidel,** secretary; **C. M. Patterson,** treasurer.

Joseph A. Clapp, formerly agent of the closed Prospect Mill of American Woolen Co., has been made agent of the company's Bradford Mill at Louisville, Ky.

A. Finkensieper has been promoted from assistant general manager to general manager of John C. Wellwood Corp. mills at McMinnville, Crossville and Winchester, Tenn., succeeding **Jacob Leutert,** resigned.

Peter Richmond has assumed the managership of Crompton-Shenandoah Co., branch of Crompton (R. I.) Co., succeeding **L. W. Mason,** who has gone to the Hartwell, Ga., plant.

John McLaren is now general manager of Ford Mfg. Co., Waterford, N. Y., succeeding **John Liddy.**

Benjamin D. Blackman, formerly manager of Armion Textile Corp., Chambersburg, Pa., has accepted a position as superintendent of the Bayonne, N. J., plant of Samuel J. Aronsohn, Inc.

George J. Greendonner, formerly designer with Rhode Island Worsted Co., Stafford Springs, Conn., is now superintendent of Valley Woolen Corp., Marlboro, N. H.

William B. Brennan, formerly purchasing agent, Powdrell & Alexander, Inc., has gone into business on his own account in Providence, R. I., as cotton cloth broker.

L. M. Carpenter, treasurer and receiver of Spencer Corp., Spindale, N. C., has been appointed general manager of Drayton Mills, Spartanburg, S. C. He will continue as receiver of Spencer Corp. pending reorganization.

Wm. O. Buzzell, treasurer and agent, Potomska Mill, New Bedford, Mass., which is in liquidation has resigned connection with that concern.

W. P. MacDougall, general manager of Belding-Corticelli, Ltd., Montreal, Que., has been elected vice-president and managing director of the company.

J. L. MacDonald, who has been vice-president and general manager of Atlantic Underwear Co., Moncton, N. B., retired recently. **H. D. Adamson,** secretary-treasurer of the company has been named acting manager.

Ben Cone, of Cone Export & Commission Co., Greensboro, N. C., and **Henry Dobson,** assistant superintendent, Chatham Mfg. Co., Elkin, N. C., both members of North Carolina State Legislature, spoke last month before regular meeting of Tompkins Textile Society, North Carolina State Agricultural & Mechanical College, Raleigh, N. C.

J. H. Wilson, vice-president and general manager, Richmond Hosiery Mills, Rossville, Ga., has resigned, succeeded by **E. W. McMillan,** formerly superintendent of Daisy plant. **Glenn W. Rankin** succeeded Mr. McMillan.

C. B. Van Horten, acting general manager, Wytheville (Va.) Woolen Mills, was appointed permanently to this position. He was formerly southern sales manager of Oak Chemical Products Co., Betchelville, Va.

W. Zopfi, formerly head designer and assistant superintendent, Slater Mills, Inc., Webster, Mass., has been appointed superintendent of the plant.

Clarence L. Jolly, formerly general superintendent of Loray Mills, Gastonia, N. C., has been made assistant superintendent, Riverdale Mills, Enoree, S. C.

Robert Littlejohn has been appointed superintendent of weaving at the Victor Cotton Mills, Greer, S. C. He formerly held a similar position with the Pelzer (S. C.) Mfg. Co.

W. A. Hunt has been appointed superintendent of the carding division of the Meritas Mills, Columbus, Ga.

Arthur Barbrecht is now assistant superintendent of the Ballston (N. Y.) Knitting Co.

John A. McCarn has been appointed general superintendent of the spinning and spooling departments of the Norwood (N. C.) Mfg. Co.

Frank Cantrell is now overseer of Weaving Room No. 5, Springs Cotton Mills, Lancaster, S. C. He was formerly with Loray plant of Manville Jenckes.

Ben Verity, formerly assistant superintendent, print works division, American Printing Co., Fall River, Mass., is now connected with Carbic Color & Chemical Co., New York.

Alden D. Nute, formerly chief chemist, print works division American Printing Co., Fall River, Mass., is now with Pacific Print Works, Lawrence, Mass.

W. L. Irby is now superintendent of the cloth department of the Stonewall (Miss.) Cotton Mills.

A. B. McAllister has resigned as superintendent of the carding department of the Patterson Mills Co., Roanoke Rapids, N. C., after 29 years.

W. R. Parker has become superintendent of Strickland Cotton Mills, Valdosta, Ga., succeeding **G. E. Malloy.** He was formerly superintendent of Bibb Mfg. Co.'s No. 2 plant, Macon, where he has been succeeded by **M. R. Gardner.**

Joseph Ganz has been appointed superintendent of Brookside Mfg. Co., Chatham, N. Y.

W. G. Day has become superintendent of the Cowpens (S. C.) Mills, succeeding **E. W. Floyd,** resigned.

Charles J. Pruitt has taken a position as superintendent of a mill recently built and operated by W. R. Grace & Co. in Chile, South America.

Obituary

Herbert J. Regan, aged 63, president and treasurer of James J. Regan Mfg. Co., Rockville, Conn., until that business was sold, died March 7.

Fred Wolstenholme, aged 59, president of Thomas Wolstenholme & Co., worsted spinners, Philadelphia, died March 7.

J. H. Means Beaty, founder of the Textile School of Clemson (S. C.) College, prominently associated with the former Lewis Parker interests, and later manager of the Olympia Mills of Columbia, S. C., until he retired in 1911, died Feb. 20.

Wm. P. Olds, aged 78, president and treasurer of Portland (Ore.) Woolen Mills, Inc., and founder of Olds, Wortman & King, died at his home in Portland on Feb. 8.

William Sachsenmaier, aged 61, president of Larkwood Silk Hosiery Mills, Charlotte, N. C., died at his winter home in Florida, Feb. 23.

John Collier, aged 83, president and treasurer of Whiteley & Collier, Inc., Philadelphia, died Feb. 19.

Marshall Geer, aged 57, senior partner of Marshall Geer & Co., cotton brokers, and at one time secretary of the New York Cotton Exchange, died March 3. He was cousin of B. E. Geer, former president of Judson Mills, who is now president of Furman University.

Simon Friedberger, aged 67, president of San-Knit-Ary Textile Mill, Philadelphia, died in Charlotte, N. C., while on a business trip.

Albert C. Weed, aged 68, vice-president of Borne Scrymser Co., New York, and associated with that company continuously for 45 years, died suddenly of heart disease, Feb. 23.

John L. Patterson, aged 60, vice-president of the Stevens Mfg. Co., Fall River, Mass., and formerly president of the Rosemary Mfg. Co., Roanoke Rapids, N. C., died Feb. 28.

Fred S. Clute, president of Mechanicville (N. Y.) Knitting Co., died Feb. 12.

Col. Edward J. Miller, aged 72, retired, formerly connected with Mayo Woolen Co., Millbury, Mass., Cascade Woolen Mill, Oakland, Me., and Madison (Me.) Woolen Co., died recently.

Samuel Haas, aged 65, president of J. K. & L. S. Weiner & Co., New York, died Feb. 22.

George H. Ireland, president and treasurer of New Hartford Knitting Co., Utica, N. Y., died Feb. 12.

A. F. Raymond, treasurer of Charles P. Raymond Service, Inc., Boston, since 1908, died recently at the age of 64. Prior to his association with that service, he was with Joseph M. Wade, who published **Fibre and Fabric,** and with his successor, the Wade Publishing Co. He is survived by his brother, Charles P. Raymond, president of the service.

Frederick C. Ward, aged 47, manager of industrial sales for Colgate-Palmolive-Peet Co., died Feb. 15. He joined the Palmolive Co. in 1926 as manager of industrial sales and retained that position after the formation of Colgate-Palmolive-Peet Co. in 1928.

Charles J. Tarrant, formerly superintendent of Issaqueena Mills, Central, S. C., for 24 years, died at his home in Greenville, S. C., Feb. 25.

Albert L. Mellor, former president of Standish Worsted Co., Plymouth, Mass., died in Boston, Feb. 9.

Aliston W. Atwood, aged 65, superintendent of Duffy Silk Co., Inc., Buffalo, N. Y., died Jan. 25.

Harry C. Ommerle, aged 64, for many years associated with the wool blanket division of the industry, died March 2.

B. M. Graves, manager, B. M. Graves Machinery Co., Charlotte, N. C., died in Philadelphia last month.

Aaron C. Franks, aged 56, vice-president and general manager Stonewall Cotton Mills, Meridian, Miss., died last month.

Col. Joseph G. Wardlaw, aged 75, business manager, Cannon Mills Co., Mill No. 3, York, S. C., died last month. He was president of York Cotton Mills before it became affiliated with Cannon.

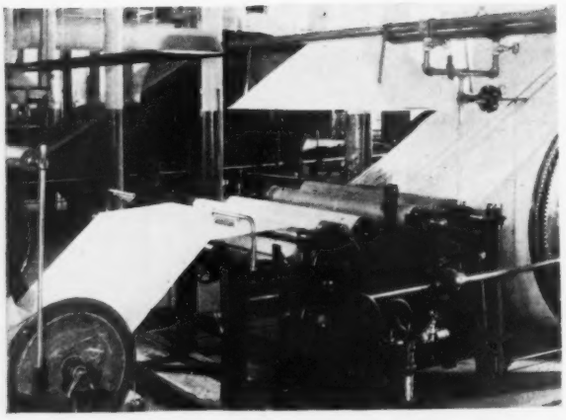
Erwin W. Thompson, aged 76, consulting engineer, died in Atlanta, Ga., last month.

Albert D. Oliphant

Albert D. Oliphant, aged 45, southern manager of McGraw-Hill Publishing Co., Inc., was fatally injured in an automobile accident at Douglasville, Ga., Mar. 9, and died a few hours later in a hospital in Atlanta. Mr. Oliphant joined TEXTILE WORLD as southern manager in 1920 and, after the merger of this publication with McGraw-Hill in 1928, assumed similar responsibilities for the company as a whole.

Born in Spartanburg, S. C., he graduated from the University of South Carolina in 1911 and entered newspaper work, serving on the editorial staff of the Columbia (S. C.) *State.* He was also assistant secretary of the State Board of Charities and Corrections prior to his entrance into business journalism. He was known throughout the textile South, enjoying the friendship and respect of men in practically every community there. He is survived by his widow, Mary C. Simms Oliphant, prominent author of historical textbooks used in South Carolina public schools, and by a daughter and two sons.

NEW MACHINERY



Stretch Control for Slashers

A device for use in conjunction with a slasher, by means of which the stretch of the yarn may be controlled, has been developed by Manville Jenckes Corp., Manville, R. I., in cooperation with Saco-Lowell Shops, Boston. It will be manufactured and sold by the latter company. The unit may be used with either a cotton or a rayon slasher.

In rayon yarns, the total amount of stretch before breakage occurs runs from 14% to 20%, with 18% a fair average. As the slashing operation commonly stretches the yarn 8% to 10%, not a great deal of elasticity is left in the yarn for the weaving operation. The new device is placed between the section beams and the size box and assures a positive feed-in to the latter. Without the use of the unit, due to the tension on the beams, the yarn slips more or less in going through the size roll, and, as there is no corresponding slippage on the drying cylinder and final beam, the rayon is stretched an amount which varies according to the slippage in the size box. By eliminating the slippage in rayons, a definite relationship between the speed of the size-box rolls and the balance of the slasher will produce a definite and calculable amount of stretch.

The device itself consists of a driven roll of 9 in. in diameter, covered with flannel or a similar material, with which the yarn is held in contact for 80% of its diameter by two smaller, steel idler rolls, giving a positive grip on the yarn. In handling rayon, the stretch unit and the size box are geared together so that the yarn is barely taut between the two. Once this adjustment is made the two are considered as a unit. To vary the stretch, change-gears can vary the speed of this unit with relation to the dry cans and the take-up roll in front of the slasher. Advantages are that section beams can be run with a minimum of tension and it is not necessary to keep changing the weights; by reducing the working stretch to a minimum (about 5% in rayon and 1% in cotton), a large amount of natural elasticity is left in the yarn, with resulting higher weaving efficiencies and a fuller and softer feel in the fabric; wear on the size roll, due to slippage, is largely eliminated.

In handling cotton, where comparatively low stretches are involved, the hook-up of the unit is somewhat different, being arranged so that yarn is fed to the size roll at speeds which may be varied by a change gear. By slowing up the unit with relation to the size roll, the yarn is stretched, and *vice versa*. The change-gear is so arranged that a gear with 100 teeth gives zero stretch, one with 101 teeth gives 1% stretch, etc.

In front of the slasher are two measuring clocks — one driven by the stretch-control device, and the other by the delivery end. By setting the two clocks at zero at the beginning of each beam, and reading the difference at the end, the percentage of stretch is accurately determined. It is said that beams run with the control unit show practicaly no variation, with the result that the weave room gets uniform beams. In handling cotton, it is asserted that, since the yarn is under no strain while going through the slasher itself, slasher speeds may be increased 10 to 15 yd. per min. Slashers equipped with the unit are now running 44 yd. per minute.

Twist Finder

For determining the turns per inch given by any twist multiplier on numbers of cotton yarn ranging from 35s to 64s, a convenient sliding cardboard calculator has been developed by Alfred Jepson & Son, P.O. Box 128, Decatur, Ga., district representative of Reeves Pulley Co. A copy may be had for the asking.

Individual Sewing Machine Drive

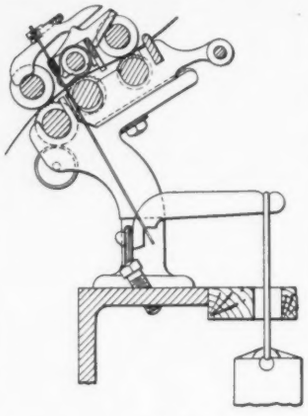
American Safety Table Co., Reading, Pa., announces a new electric clutch for use with individual sewing machine drive. The unit, ruggedly constructed with working parts housed and shielded from dirt, is an improvement of the tapered clutch and brake used in the American group-drive table. Three easily accessible bolts attach it to the under side of table.

Spindle Oils

Spindle oil in three viscosities is announced by Standard Oil Co. and Esso Marketers, 26 Broadway, New York. These oils are designed to insure minimum power loss, to resist oxidation and gumming, and to produce high flash point at lowest consumption. They are being offered under the brand name Spinesso.

Long Draft for Roving and Spinning Frames

Positive means for holding the tail end of cotton fibers is said to be incorporated in a new system of long draft for roving and spinning frames now being manufactured by Belger Co., 36 Pleasant St., Watertown, Mass. It is unnecessary to make changes in the frame in order to install this system. Included is a positive break draft, usually necessary in spinning 20s to 30s warp and 40s filling. The long-



draft assembly consists essentially of one fluted middle top roll having a loose leather belt wrapped around each boss. The device is applied in place of the regular middle top roll, leaving the fluted bottom rolls free of additional parts. To keep the belts and roll in position, there is a cradle with ends which fit into the cap-bar spaces of the middle top roll. The back saddle is integral with the cradle to prevent dropping or mislaying. The weighted steel middle top roll, which has no cloth covering, produces the positive break draft; and this can be varied on standard spinning frames quickly and easily, by means of change gears, from 1.05 to 1.25. About 60% of the open fibers are held by the loose leather cot against the bottom fluted roll and are said to be positively controlled. The nip is brought to ⅜ in. of the bite of the front roll.

Knitting Machinery

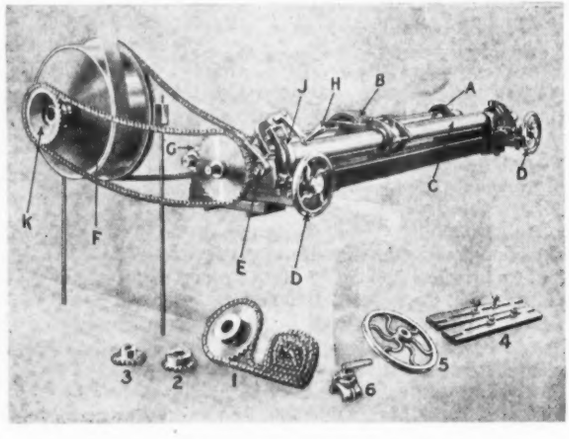
Three new developments in knitting machinery are described in the report of the third annual Knitwear Industrial Exposition on page 116 of this issue. These include two improved links-and-links flat machines, one developed by Robaczynski Machine Corp., 340 Ten Eyck St., Brooklyn, N. Y., and the other by Queens Machine Corp., 280 Starr St., Brooklyn. The third development is a separating cam for pattern work on circular machines developed by Kretser Knitting Machine Co., Inc., 26 Court St., Brooklyn.

D-C Motor for A-C Line

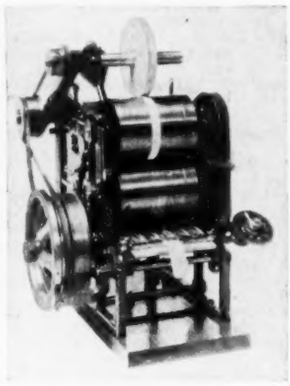
A new type of electric motor, utilizing a stationary commutator and having the characteristics of a series type d.-c. machine but operating on a.-c. supply, has been developed by E. F. W. Alexanderson, consulting engineer of General Electric Co., Schenectady, N. Y. Announcement of the motor, known as Thyratron, and made possible by advances in electron-tube application, was made at the January meeting of the American Society of Electrical Engineers. Advantages claimed for the motor include the following: speed independent of frequency of power; smooth control obtained over full speed range; motor will resume operations at set speed without drawing excessive current from line upon restoration of power momentarily shut off; efficiency is high and efficiency curve relatively flat.

Needle-Point Card Grinder

For restoring needle-points to card clothing on cylinders and doffers, Dronsfield Bros., Ltd., Oldham, England, is now building a portable, auto-feed, needle-point, grinder with slow cylinder driving motion, distributed in this country by John Hetherington & Sons, Inc., 250 Devonshire St., Boston. The grinder comprises tube **A** which carries needle-pointing boss **B**, double-way traversing screw in separate tube **C**, setting motions actuated by handwheels **D**, automatic feed motion **E**, and newly designed slow driving motion **F**. Other parts shown are chain wheels 1, 2, and 3 for use when grinding the doffer, extension plates 4 to carry the machine when grinding the doffer, band pulley 5 for burnishing the roller, and setting gage 6. The grinder wheel consists of thin bevel-edged emery disks mounted on an iron boss with rubber washers between each disk. To operate, the disks are set $\frac{1}{16}$ in. into wire, from which position they move back and forth across the card, and feed automatically down until the full depth of $\frac{1}{4}$ in. is reached, from which point they gradu-

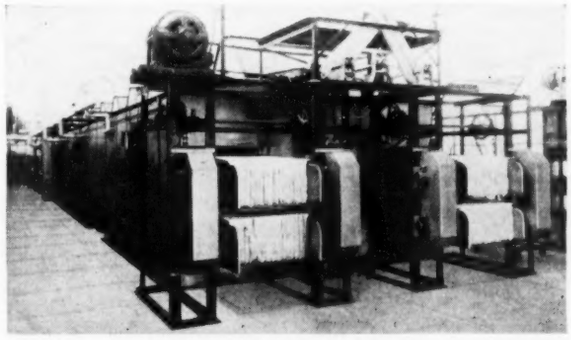


ally return to starting point. The slow driving motion **F** gives the cylinder approximately 6 r.p.m. and the doffer 12 r.p.m. The slow traversing movement of the grinding disks is effected by chain drive from wheel **K**. During the grinding operation a burnishing roller with wire teeth points running forward is used continuously.



Folding and Pressing Machine

Fabric Machine Co., 307 Center St., Bridgeport, Conn., has announced a three-roll folding, measuring, pressing, and rewinding machine designed for use with materials requiring pressing to retain the fold. There are two heated pressing rolls, giving twice the usual pressing surface; the machine makes one or a gang of folds up to 6 in. wide will measure the



material, and either rewind after folding and pressing or pass to containers preparatory to other operations. It is said that materials which ordinarily do not hold a press and tend to open up are effectively handled. The machine is also furnished with special, beaded rolls for trouser-curtain work. Heating may be done with either gas or electricity.

Small Electric Brakes

A new line of a.-c. and d.-c. solenoid-operated brakes is announced by Cutler-Hammer, Inc., Milwaukee, Wis. Three new brake sizes are included with torque ratings ranging from 3 to 75 ft.-lb., in accordance with NEMA standards. The brake wheel is relatively large and is designed to allow low total brake-shoe pressures, which, distributed over the large lining area, result in low unit pressure and long even wear of friction surfaces. The low pressure also results in low stresses on all pins and pivot points and allows the use of a small operating solenoid requiring less current. Dimensions of the a.-c. and d.-c. brakes are interchangeable, so that machine designers can provide standard mounting holes.

Two Bronze Air Nozzles

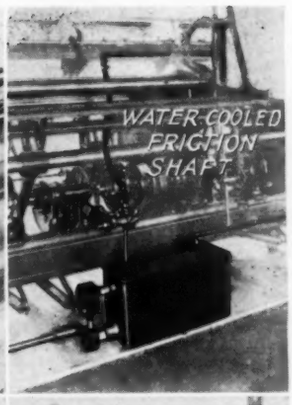
Bronze air nozzles in two new designs—with integral hose end and with female pipe end—are announced by Lunkenheimer Co., Cincinnati, Ohio. To insure seat tightness the nozzles are fitted with non-metallic disks which can be easily renewed by unscrewing a nut at bottom of the nozzle and removing the spring.

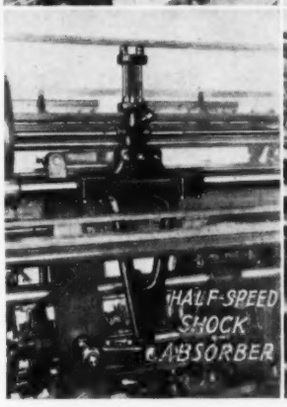
Non-Corroding Rayon Dryer

Damage to wet rayon due to contact of the yarn with minute rust particles is prevented by a new dryer manufactured by Philadelphia Drying Machinery Co., 3351 Stokely St., Philadelphia. In this dryer all surfaces exposed to corrosion-forming moisture are constructed of aluminum or aluminum alloy. These parts include steam coils and supports, bolts used to assemble framework, internal partitions and insulating panels, and various other surfaces which come in contact with recirculated, heated, and humid air.

Modified Cone For Variable Speeds

Fay H. Martin, of Belger Co., 36 Pleasant St., Watertown, Mass., has developed a new-type bottom cone for variable-speed winding as used on roving frames. The contour of variable-speed cones is usually calculated from hyperbolic curve plotted from the increment of increase in bobbin diameter. In order to produce a more even tension on the roving throughout the doff, the Martin cone profile varies according to the diameter of the roving, which is generally less when the bobbin is small, due to the greater pressure of the presser. It is asserted that tests have shown a 50% decrease in size variation and breakage of finished yarn.



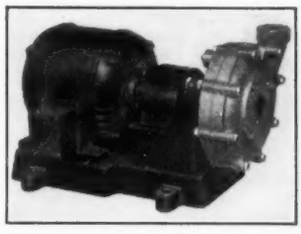


Full-Fashioned Attachments

Four new or improved attachments for the Reading full-fashioned knitting machine have been developed by Textile Machine Works, Reading, Pa. Improvements in the lever-type friction box for three-carrier knitting include more rigid carrier-rod driving members, safety feature to prevent breakage of parts in case of improper operation, positive lay-out lever consisting of plunger and eccentric pin to lock lever either in operating or laid-out position, and increased visibility between friction box and carrier rods. A half-speed shock absorber reduces carrier-rod shock by causing the main carriers to travel at half speed during the latter part of their movement, and minimizes pressure on the friction boxes. A water-cooled friction shaft for continuous high-speed operation has water of thermostatically controlled temperature pumped through it. An improved splicing device for use in splicing friction boxes eliminates the necessity for extremely tight splicing and results in less wear on carrier nuts and spindles and increased life of machine.

Acid-Resisting Pump

A non-metallic, medium-capacity pump, designed primarily to handle acids and other corrosive chemicals, has been developed by American Hard Rubber Co., 11 Mercer St., New York. The casing, made of acid-, heat- and distortion-resisting hard rubber, is mounted to the base by means of a hard-rubber-covered casting which acts as a chamber to catch drip from the stuffing box. The motor shaft is extended, tapered,



and pinned into the pump shaft, with all parts interchangeable. The bypass is adjustable and cored into the back casing.

Silk-Rayon Shuttle

U S Bobbin & Shuttle Co., Manchester, N. H., has developed a new tension shuttle for silk and rayon. The shuttle is said to be equally effective in shuttle-changing, box or plain looms. The necessity for mops, elastic bands, etc., is eliminated. The manufacturers assert that when the shuttle tension is once set, the tension is maintained without further adjustment. Use of this shuttle is said to result in improved fabric quality.

New Publications

A.S.T.M. Tentative Standards, 1934; American Society for Testing Materials, Philadelphia; $7 paper binding, $8 cloth binding.

The 236 tentative specifications, methods of testing, definitions of terms, and recommended practices contained in this book are published primarily with a view to eliciting criticism before they are formally adopted by the society as true standards, but in addition they are expected to be of immediate use to industry, since they represent the latest thought of the committees on the subject covered.

Tentative standards for textiles contained in the 1934 volume relate to the following subjects: asbestos roving and yarn, holland cloth, rayon, tubular, sleeving and braid, silk and cotton tape, woolen yarn, worsted yarn, copper and manganese in textiles, hard-scoured wool in wool in the grease, identification and qualitative analysis of fibers in textiles, and textile terminology. These proposed standards are all the work of the textile committee, D-B, which is under the chairmanship of Prof. H. J. Ball, Lowell Textile Institute.

Industrial Fabrics: A Handbook for Engineers, Purchasing Agents and Salesmen, by George B. Haven; Wellington Sears Co., New York; 538 pages. Price $2.

In 1845 the firm of N. Boynton & Co., predecessor of Wellington Sears Co., was organized in Boston to conduct a ship chandlery business which included duck, both cotton and flax, cordage, chains and anchors. In the early 80's the company became interested in cotton manufacturing in the South to enable it to care for an extension of its industrial field beyond the shipping industry. With such a background, it seems to us particularly appropriate that Wellington Sears Co. should now publish, under the editorship of Professor Haven, a handbook on industrial fabrics. Certainly, there is a need for such a reference volume and this company seems to be admirably fitted to fill that need.

In our opinion, the outstanding chapter in the book is that on Uses of Industrial Fabrics, which contains within 50 pages probably the most complete information on this subject that is available. Similarly, a chapter on Laboratory Design and Practice brings to the technician in a company which manufactures, sells or buys industrial fabrics a compilation of facts of unusual scope and completeness. There are also chapters on Types of Cotton, Manufacturing Processes for the Cotton Fiber, Cotton Yarn, and Organization and Properties of Industrial Fabrics. An extremely complete collection of specifications and test methods concludes the book.

It is felt that, in addition to buyers of industrial fabrics, those associated with technical schools will find the material of great interest. Accordingly a complimentary copy is being made available to the faculty of technical schools and colleges.

Business Literature

Dyes. General Dyestuff Corp., New York. Color cards illustrating shades produced with Celliton, Celliton Fast, and Celliton Discharge dyes on cellulose acetate.

Dryers. Rasmussen & Co., Chicago. Engineering audit of performance of Proctor & Schwartz drying equipment installed by Franklin Rayon Corp., and Malina Co., Inc.

Full-Fashioned Knitting. Louis Hirsch Textile Machines, Inc., 47 W. 34th St., New York. Folder describing Kalio Complet full-fashioned, single-unit hose machine.

Card Grinding. Dronsfield Bros. Ltd., Oldham, England; John Hetherington & Sons, Inc., 250 Devonshire St., Boston, American agent. Treatise No. 19, entitled "Card Grinding Talks," containing practical hints on card grinding.

Woolen Machinery. Whitin Machine Works, Whitinsville, Mass. Illustrated 48-page booklet primarily devoted to recent developments in woolen cards. Also February issue *Whitin Review* containing articles on super-draft roving, spinning of woolen yarns, builder motions, and large package ring spinning and twisting.

Chemicals. E. I. Du Pont de Nemours & Co. Inc., Wilmington, Del. Booklet describing Duprene synthetic rubber. Also quarterly price list for R & H Chemicals.

Attachments. Textile Machine Works, Reading, Pa. Folder describing six attachments for increasing efficiency of textile machinery.

Graphic Instruments. Esterline-Angus Co., Indianapolis, Ind. Bulletin containing article on testing brakes and brake linings.

Furnace Linings. McLeod & Henry Co., Troy, N. Y. Catalog describing design, installation, and servicing of furnace linings and arches.

Business News

Belger Co., Watertown, Mass., has appointed J. A. Butler southern representative with headquarterrs at Charlotte, N. C.

Karl M. Herstein has opened a new office at 50 East 41st St., New York, where he will continue his practice as consulting chemist.

Peter Smith, Clifton, N. J., has been appointed exclusive agent for the sale of all machinery of the Pennsylvania Textile Mills, Clifton, N. J. The equipment includes 100 looms, together with dyeing and finishing, for making plain and jacquard plushes. The building, comprising 100,000 sq.ft. floor space, is also for sale.

Wilcox & Gibbs Sewing Machine Co., New York, announces the election of David C. Cocks as assistant secretary and assistant treasurer. A testimonial dinner was extended to Mr. Cocks, who has been with the firm for 18 years, at the National Arts Club. F. R. Towle, treasurer and general manager of the company, was one of the important speakers at the dinner.

J. B. Meacham, has been appointed manager Hamilton Machinery Co., Charlotte, N. C.

Fred H. Morrison, Andover, Mass., is in business on his own account dealing in textile equipment and supplies. He was formerly New England representative of the Machinery Liquidating Co., New York.

Adolff Bobbin Co., Inc., Kearney, N. J., announces following changes among its southern representatives: John Klinck, Augusta, Ga., will cover South Carolina in addition to Georgia and Alabama which he has been covering. J. Alfred Lechler, Charlotte, N. C., will cover Tennessee in addition to North Carolina and Virginia. Langdon S. Ligon, who formerly covered South Carolina and Tennessee, has accepted a position with Abbott Winding Machine Co.

Gustavo Preston Co., Boston, has appointed John P. Batson, Greenwood, S. C., to sell roller leathers in South Carolina.

I. B. Williams & Sons, Dover, N. H., has appointed Charles C. Withington, Greenville, S. C. and R. A. Brand, Charlotte, N. C., general agents to cover South and North Carolina, respectively. Complete stocks of leather goods will be maintained in both States.

Solvay Sales Corp., general sales offices, now located at 61 Broadway, will be moved to 40 Rector Street, New York, on April 1. The New York branch of the Solvay Sales Corp. is at present located at 40 Rector Street and will continue to maintain offices there.

Corn Products Refining Co., New York, has named L. G. Manning as associate in the Development and Research Department on Textiles. Mr. Manning's previous experience includes 11 years as professor at the New Bedford (Mass.) Textile School, sales representative for Scott & Williams, superintendent of Root & McBride and manufacturing executive in organizing textile mills of Marshall Field & Co.

Calco Chemical Co., Inc., has recently moved its southern sales office, laboratory, and warehouse to its new building at 1112 South Boulevard, Charlotte, N. C.

Elgin Softener Corp., Elgin, Ill., has taken over the **Isometer Corp.** and will manufacture and sell the flow meters developed by the latter concern.

E. F. Houghton & Co., Philadelphia, has elected the following officers: chairman, Louis E. Murphy; president, Maj. A. E. Carpenter; vice-president, George W. Pressell; treasurer, Dr. R. H. Patch; secretary, A. E. Carpenter, 3rd.

United States Testing Co., Hoboken, N. J., has announced the opening of a testing station at 43 Morgan Ave., Brooklyn, N. Y.

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50 Years in Textile Publishing

(Continued from page 87) firms that they established are in existence and we are still doing business with the second and third generations.

During those 50 years there have been as great developments in business and trade publications as in American industry. In 1885, when asked what my business was, and I replied "publishing a textile trade paper," I had to explain what it was all about. There were very few trade papers, probably not more than 40 in the country altogether, and these were very amateurish and far different from the modern business publication of today with its carefully organized staff of experts familiar with their industries. Textile World started with three people on its staff. Now it has more than 75 who are directly engaged in its editorial, advertising, circulation, directory and catalog work, and while it is as distinct and individual as ever in its industry relations, it also has the resources of an organization of 1,000 people at its disposal.

I believe a business paper should have "personality," but that it should not be merely the mirror of one person. Textile World has never been a "one-man" paper. Its success has been due to many men, each of whom has made a valuable contribution. Joseph H. Bragdon, Sr., Henry G. Ketridge, Samuel Dale, E. A. Posselt, Charles H. Clark, Vernon Carroll and Clarence Hutton were editors who have helped shape its editorial policies in the past and now Douglas G. Woolf, who began his journalistic career with the paper 19 years ago, with his able staff of associates, is producing a paper which I, who am its most severe critic, believe surpasses even the high standards of the past.

On the business side, Frank Nagle, Walter Guild, Sam Steele, Joe Bragdon, Jr., Herbert Barnes and Albert Oliphant are some of the names of men vitally identified with the growth of the publication who set standards of service and cooperation that built up the remarkable goodwill which has characterized the history of the paper, and today A. P. Gumaer and his staff of salesmen are maintaining the old standards and planning new forms of service. A publishing concern, like a manufacturing plant, must always be alert to redesign its product or add new features to meet changing conditions and to give greater value. We have done that many times and now are at it again. Textile World has grown old only in years, but not in personnel. It has been fortunate in always finding enthusiastic young men to take up the tasks of the older men who pass out of the picture and, while proud of the traditions of the past, it is living with problems of the present and trying to forecast the future.

I have thoroughly enjoyed my job during this half-century. I have been fortunate in my associates and favored with the loyal and continuous business friendship of thousands of men in the textile industry, many of whom I have never seen, but whom I like to think of as part of a large Textile World "family" of subscribers and advertisers.

This is not a valedictory although it may sound like it. I haven't the least idea of quitting the job until my younger associates intimate that I am getting to be a "back number." The next 50 years promise to be still more interesting than the last 50, and I want to spend as many of them as I can in the publishing business.

Textile World Analyst

The old story: mill activity in face of selling paralysis

Textile Mill Activity Above Last Year: TEXTILE WORLD's index of textile mill activity indicates that the rate for the first two months of 1935 was approximately 10% higher than that for the corresponding period of 1934, and was almost equal to that for the same period of the 1924-31 average, roughly assumed as "normal." This estimate is based on incomplete statistics and is subject to revision. If it is reasonably accurate, our forecast of at least 10% increase in activity in 1935 as against 1934 has been maintained for a sixth of the year at any rate. . . . It should be pointed out that discussion on this page covers February only and does not include the March break in cotton.

THE textile industry was on familiar ground during a good part of February. Activity in the mills was going merrily on while activity in the selling districts was drying up. As a result, there were statements in the daily newspapers about the fine condition of the textile industry whereas any textile manufacturer knew it just wasn't so.

Official February statistics on fiber consumption are not available at this writing; however, as indicated above, the mill activity for the first two months seems to have been ahead of last year. Certainly, January was a lively month. Rayon deliveries broke all previous monthly records; cotton consumption was higher than that in any month since August, 1933; and both silk deliveries and wool consumption kept up at a good high rate.

While we are on the subject of production, it is interesting to compare textile activity with that of general industry during recent years, now that the Federal Reserve Board's 1934 statistics are available. Below, TEXTILE WORLD's index of textile mill activity is shown against the Board's index of industrial production, both on the basis of 1923-25 as 100:

	Textile Activity	General Industry
1929.....	115	119
1930.....	89	96
1931.....	93	81
1932.....	83	64
1933.....	104	76
1934.....	89	79

It will be noted that in 1933 textile activity soared above the "normal" while industry in general was 24% below. In 1934, the textile index sagged sharply while general activity improved —but even at that, the former was still 10 points better than the latter. In addition, it will be noted that there was a spread of 55 points between the high and low years in industry generally, as compared with a spread of only 32 points in textiles—again showing the relatively high stability (in production) of a consumer goods industry, such as textiles.

But this is only temporizing. To get back to less pleasant subjects: It is certainly no secret that the industry, in most of its branches, has been passing through another low spot recently. In fact, the general atmosphere in the markets was about as depressing as we remember it. Part of this was justified, because of decreased sales, inadequate price levels, and a lot of pesky contributive situations which were unpleasant. But part of the pessimism definitely was not warranted. It was the sort of thing that comes in an industry which has not yet found a sure way to secure a *steady* profit, no matter how small, for its average units. Personally, we think there is more of a disposition, today, to find that answer than there ever has been before. The problem is a tough one—but not insoluble.

A word as to prices. Surprisingly, in the face of despair, manufacturing margins in carded cotton fabrics showed only a very slight loss for the month of February (Table I), while those for carded yarns actually registered a gain (Table II).

This steadiness in the cotton group is also reflected in TEXTILE WORLD's price index numbers but a decline in wool values the middle of February forced the raw wool, top and yarn indices down, cloth being as yet unchanged. For the first time since last September silk halted its steady advance and declined one point.

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
July, 1931.....	15.3	August, 1934....	16.6
October, 1931...	13.3	September, 1934	18.6
January, 1932...	12.1	October, 1934...	17.4
July, 1932.....	9.1	November, 1934.	15.8
October, 1932...	12.6	December, 1934	16.2
January, 1933...	10.4	January, 1935...	16.2
April, 1933.....	11.4	February, 1935..	16.0
July, 1933.....	23.4	Feb. 6....	16.2
October, 1933...	19.1	Feb. 13....	15.9
January, 1934...	18.4	Feb. 20....	16.0
April, 1934.....	17.6	Feb. 27....	15.7
July, 1934.....	15.5		

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
July, 1931.....	12.6	August, 1934....	15.3
October, 1931...	12.7	September, 1934.	15.6
January, 1932...	10.9	October, 1934...	14.6
July, 1932.....	9.6	November, 1934.	13.5
October, 1932...	12.3	December, 1934.	13.5
January, 1933...	10.2	January, 1935...	13.5
April, 1933.....	10.1	February, 1935..	3.9
July, 1933.....	23.2	Feb. 6....	13.3
October, 1933...	20.0	Feb. 13....	13.8
January, 1934...	18.3	Feb. 20....	14.2
April, 1934.....	15.9	Feb. 27....	14.2
ly, 1934.....	14.7		

▼ ▼ ▼

Textile World's Price Index Numbers

	Cotton Index Numbers				Wool Index Numbers				Silk Index
Date	Cotton	Yarns	Gray	Colored	Wool	Tops	Yarns	Cloth	Raw Silk
July 31, 1914..	100	100	100	100	100	100	100	100	100
1932, average..	51	76	73	100	78	97	115	128	34
1933, " ..	84	116	110	113	116	135	139	181	35
Jan. 1934.....	124	151	139	144	153	180	181	222	32
Feb. 1934.....	132	148	146	144	153	180	181	222	34
Mar. 1934.....	132	149	145	142	152	178	180	209	31
Apr. 1934.....	128	144	141	141	147	176	180	209	30
May 1934.....	125	136	132	140	140	166	170	209	27
June 1934.....	132	136	132	140	138	160	169	209	26
July 1934.....	135	148	136	140	138	159	161	209	25
Aug. 1934.....	141	150	136	140	130	150	160	209	25
Sept. 1934.....	138	148	149	144	127	145	155	190	24
Oct. 1934.....	133	141	143	140	125	140	154	188	26
Nov. 1934.....	134	136	138	140	124	137	154	190	27
Dec. 1934.....	135	136	139	140	124	136	154	190	29
Jan. 1935.....	135	138	137	140	124	132	154	190	32
Feb. 1935.....	134	138	136	140	116	124	152	190	31

Note: All cotton indices since Aug. 1, 1933, include processing tax.

TEXTILE WORLD'S

Cotton Digest

THE announcement that the annual convention of the American Cotton Manufacturers Association will have merchandising as its theme is good news for two reasons. In the first place, this is by far the major problem of the industry. The reactions of contributors to the "Most Important" symposium in our Annual Review and Forecast Number supplied fresh evidence of that fact.

More than that, however, this is a welcome change from the NRA-AAA-XYZ flavor of most conventions during the last two years. Although it could not have been otherwise, and although the Government-industry tie-up is still a vital subject, it is refreshing to turn occasionally to the fairly sizable job of selling goods.—*Editor.*

A.C.M.A. to Meet At Augusta

Stressing merchandising, American Cotton Manufacturers Association will hold its 39th annual convention April 25 to 27 at Bon Air-Vanderbilt Hotel, Augusta, Ga. Convention-proper will begin at 10 a.m. Thursday morning with an address by President W. D. Anderson. The three-day program will be featured with a discussion of some phase of industrial relations by Col. Frank P. Douglass, member of the Textile Labor Relations Board. Also, Cotton Textile Institute will put on style show and moving picture dealing with increased uses and stylings of cotton. Other speakers will include George A. Sloan, chairman, Cotton Textile Code Authority; G. H. Dorr, president, Cotton-Textile Institute; Sol Dribben, Cone Export & Commission Co.; and David Ovens, president, National Retail Dry Goods Association.

•

$9 Cotton Break Deadlocks Markets

A spectacular break in the New York cotton market on March 11, which caused losses up to 187 points, brought about a deadlock in cotton textiles that continued for several days. Gray goods factors took a phlegmatic attitude on the break; the prevailing tendency was to resist the downward pressure through a general discouragement of business. Yarn markets reflected a somewhat similar viewpoint; these quotations did take a dip, but there was nothing which could be regarded as a rout.

The reaction in cotton textile divisions might best be described as "so what?" The crash itself was as mysterious as it was sensational. Futures broke as much as $9.35 per bale, and the losses involved were the most severe the market has known since cotton's 200-point drop Sept. 8, 1927. During the subsequent 48 hours, a rally permitted the salvage of some losses. Reassuring reports came from several Senators on the matter of cotton loans following a White House conference. New York spot closed at 11.55c. Mar. 13, against 11.25c. Mar. 12 and 12.30c. Mar. 9.

The attitude of cotton textile divisions appeared to be that, assuming the whole debacle was just a speculator joy-ride with political ramifications then its effect on both goods and yarn divisions might be only temporary. Amid the flood of post-mortems on the break, was the claim that it was "artificially stimulated"; Chairman Smith of the Senate Agricultural Committee said this aspect probably would be the subject of an investigation by that body. *(See editorial note, page 76.)*

•

Callaway Strike

With wages said to be 8% above code requirements, operatives of Callaway Mills, LaGrange, Ga., walked out early this month. Prior to an 8½% reduction, wages at this group of mills were 16½% above code requirements, according to Cason J. Callaway, president. Installation of Bedeaux system of operation was cited as a factor in the controversy.

•

N. C. Style Show April 25

Home economics departments of nine North Carolina colleges have accepted invitations to participate in annual style show to be held April 25 at North Carolina State Agricultural & Mechanical College, Raleigh, N. C.

•

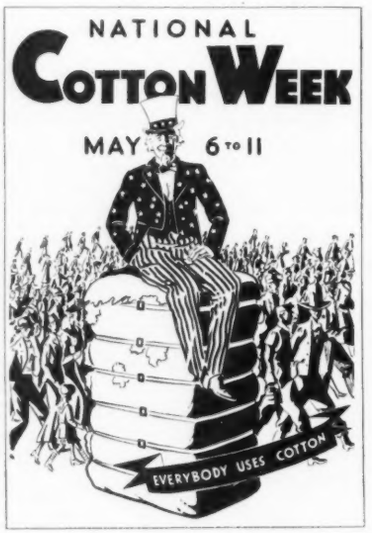
Textiles, Inc., Secures Loan

A. G. Myers, receiver of Textiles, Inc., Gastonia, N. C., received permission last month to borrow $150,000 to be used in "filling yarn contracts and to preserve and care for the property of the corporation." Mr. Myers stated that since going into receivership two years ago Textiles, Inc., operating 14 units and capitalized at $17,000,000, has paid all obligations incurred under receivership and has retired $330,000 of old corporation's indebtedness.

•

Coming "Cotton Week" to Be the Best Ever

Early responses to a questionnaire addressed by the Cotton-Textile Institute to cotton textile manufacturers and their fabricating customers in every field of production indicate widespread and well-advanced preparations on their part for the 1935 observance of National Cotton Week, May 6 to 11. A record number of manufacturers are developing plans to help their wholesale and retail distributors make their participation this year the most successful in the



history of this annual event. More than 30,000 wholesale and retail establishments are expected to take active part in Cotton Week's celebration.

Data from the returned questionnaires will be compiled in the National Cotton Week Directory of Market Information which will be distributed to participating merchants to furnish practical ideas on what to buy and to stimulate "prompt and adequate action in the selection of Cotton Week merchandise." Manufacturers receive free listing in this directory.

•

January Operations

Statistics of particular interest to cotton manufacturers, showing January operations and the raw material situation, were:

Spindle activity	102.6% capacity, or 7,510,017,095 spindle hours
Cotton consumed	546,787 bales
Cotton exported	465,711 bales
Cotton imported	7,683 bales
Cotton ginned	

December operations for comparison:

Spindle activity	87.1% capacity or 6,027,205,823 spindle hours
Cotton consumed	413,535 bales
Cotton exported	504,000 bales
Cotton imported	
Cotton ginned (Jan. 23 report)	9,380,348 bales

NACM For NRA Continuance

The National Association of Cotton Manufacturers, meeting in Boston March 11, went on record as favoring the continuation of NRA "with proper modification"; urged the elimination of the processing tax; and advocated the passage of an Act by Congress prohibiting entrance into this country of any textile in greater ratio to domestic production than that for the years 1930, 1931 and 1932. The meeting opposed attempts to establish changes in the present freight rate structure by national legislation. It also expressed opposition to the establishment of a separate code for the manufacture and finishing of woven rayon fabrics, or the transfer of these manufactures to the silk code. Finally, the meeting urged State Legislatures to consider carefully any legislation that would increase tax or other burdens.

•

Denies Processing Tax Laxity

Denying rumors that there is a laxity in the collection of the processing tax on cotton, the Commissioner of Internal Revenue states that less than 4% of the total processing taxes assessed and due is now unpaid. He adds that the utmost diligence is being exercised in the collection of the tax and that there have been relatively few applications granted for postponement of payment beyond the period of one month which is the limit except in unusual and exceptional cases.

•

Dunean and Enka Tournament Champions

Dunean Mills, Greenville, S. C., boys' basketball team and American Enka Corp., Enka, N. C., girl's team were victors over a large field of contestants in 15th annual Southern Textile Basketball Tournament held at Greenville, S. C. last month. More than 5,000 people crowded Textile Hall to witness final contests.

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Association Notes

Southern Combed Yarn Spinners Association met in executive session Mar. 1 at Gastonia, N. C. Proposed amendment to workman's compensation laws dealing with occupational diseases, and other pending legislative problems were discussed.

Textile Operating Executives of Georgia will hold carding and spinning meeting March 16 at Chemistry Building, Georgia School of Technology, Atlanta, Ga.

J. E. Sirrine, Greenville, S. C., will be guest speaker at dinner meeting of Southern Textile Association to be held April 12 (Friday of exposition week) at Greenville, S. C.

•

Cotton Mill News

Pepperell Mfg. Co., Biddeford, Me., is shipping from the division it recently abandoned, 170 looms to Fall River.

COTTON IN THIS ISSUE

	page
TEXTILE WORLD's Guide to Southern Textile Show	78
George Sloan Establishes Merchandising Firm	82
Over 200 Southern Weavers Cross-Examined	84
Diversification Solves Merchandising Problems	85
American Cotton Is Not Degenerating	88
Ten Years of Cotton Textiles	88
Roll Spacing Is Key Setting of Carding and Spinning	89
Ring-Frame Production Calculations	94
Designs Inspired by Guatemalan Costumes	98
Tale of the Shirt—Fancy Weaves, Woven Colors	107
Flake and Nep Yarn	120
Calculating Warp Contraction	121
Long Draft for Roving and Spinning Frames	124
Needle-Point Card Grinder	124
Twist Finder	124
Modified Cone for Variable Speeds	125

Amoskeag Mfg. Co., Manchester, N. H., is shutting down 2,000 gray goods looms.

Columbia Mills, Inc., Minetto, N. Y., has begun superstructure for one-story addition, for which general contract was let to the Universal Building & Construction Co., Syracuse, N. Y.

Elk Cotton Mills, Fayetteville, N. C., have replaced ten old-model spinning frames with Saco-Lowell long draft equipment, 300 spindles per frame.

Henry River (N. C.) **Mills Co.** has begun work on a one-story brick addition to measure 30x104 ft., which will enlarge the capacity of the plant.

Manville-Jenckes Co.'s Loray plant, Gastonia, N. C., has been inspected by Harvey Firestone, president, Firestone Tire & Rubber Co. who is said to be considering its purchase. At time of going to press the company had no statement to make on this subject.

Cross Cotton Mills Co., Marion, N. C., has work under way on one-story addition to be equipped for production of fine combed yarns. It is reported to cost over $25,000, with machinery. Last year the firm spent $125,000 in machinery for heavy double-corded yarn. It is a good example of diversification.

Patterson (N. C.) **Mills,** closed for nearly four years, has begun operations under new management. Dr. O. P. Corpening, of Granite Falls, N. C.; W. L. Long and Earl E. Carpenter, of Gastonia, N. C., have acquired the property. Mr. Long is manager.

Narrow Fabric Co., Inc., Reading, Pa., has purchased and will install at once 63 additional Barmen lace manufacturing machines. NRA permission under the lace industry code was obtained since these machines came from the Laros Textile Co. and do not represent increase of industry capacity.

Gossett Mills, Anderson, S. C., has awarded contract for construction of 65 ft. extension to Ladlassie plant.

Anderson (S. C.) **Weavers, Inc.,** has been organized by E. A. Hill, formerly with LaFrance (S. C.) Industries, to manufacture upholstery and tapestries. The plant, expected to begin operations this month, will operate 12 looms, employ 20 persons, and buy yarn in open market.

Aiken Mills, Inc., Bath and Langley, S. C., have worked under way on establishment of a branch mill at Buenos Aires, Argentina, where property has been leased for plant. Considerable machinery and equipment from the former Nos. 1 and 2 Arkwright Mills, Fall River, Mass., are being moved to new location. G. A. Franklin, general manager, is supervising construction and equipping of new plant.

Norris Cotton Mills Co., Cateechee, S. C., has installed 35 new looms.

Arcade Cotton Mill, Rock Hill, S. C., shut down indefinitely on Feb. 8, assigning the high cost of NRA and the processing tax as the cause.

Excelsior Mills, Union, S. C., will construct new addition. Lockwood-Greene Engineers, Inc., Spartanburg, S. C., and Gallivan Building Co., Greenville, S. C., hold architectural and construction contracts, respectively.

Brookside Mills, Knoxville, Tenn., has installed a new 36-spindle, 8x4, superdraft Whitin speeder for experimental purposes.

Dominion Textile Co., Ltd., has completed preparation for the installation of 96 new Crompton & Knowles shuttle changing silk and rayon looms in its Verdun plant, Montreal, Que. Warping and other equipment necessary for the additional looms will also be added.

•

Cotton Financial Notes

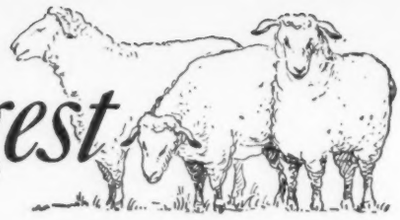
Profit and loss statements from a number of mills follow:

	Profits 1934	Profits 1933
Pilgrim Mills, Fall River, Mass.	$ 51,368	.....
Booth Mfg. Co., New Bedford, Mass.	*72,715	*$18,933
Raybestos-Manhattan, Inc., New York	750,891	685,198
Charlton Mills, Fall River, Mass.	*28,441	67,447
Boott Mills, Lowell, Mass.	18,325	29,195
Soule Mill, New Bedford, Mass.	*160,000	*7,767
Beacon Mfg. Co., New Bedford, Mass.	8,000	.....
Cosmos Imperial Mills, Ltd., Montreal	184,268	102,026
Montreal (Canada) cottons, Ltd.	1,138	14,236

*Indicates loss instead of profit.

TEXTILE WORLD'S

Wool Digest



THE annual convention of the National Association of Wool Manufacturers last month reflected a desire on the part of that branch of the industry to "dig in" and consolidate its gains rather than to launch new reform movements. That is often good strategy—and probably is in this case.

The exception, of course, is the initiation of the promotional campaign. This is good news. The enthusiasm which is greeting it is better news yet.

Just a word of warning: Don't let this essential movement be killed by minor squabbles. For instance, at the start there seemed to be some dissatisfaction with the method by which financing quotas have been set up. Small mills complained that their share was out of line. The point we want to make is that no such sources of trouble should be allowed to interfere with the main plan. Differences must be ironed out immediately so that the job will go on.—*Editor.*

Wool Promotion Body Starts Work

The board of directors of the newly organized Associated Wool Industries, a cooperative organization for the advancement of wool, held its first annual meeting at the headquarters of the National Association of Wool Manufacturers in New York. Permanent officers were elected as follows: Arthur Besse, chairman; Claude H. Ketchum, secretary; Walter Humphreys, treasurer.

An executive committee was elected consisting of 15 members as follows: Dealers—Harry J. Blake, Robert Dana, Durham Jones, Robert L. Studley and Herbert K. Webb; Growers—F. A. Ellenwood and F. R. Marshall; Manufacfacturers—Arthur Besse, E. Stanley Bowers, Thurmond Chatham, Alban Eavenson, R. Fontaine, William S. Nutter, Nathaniel Stevens and Arthur O. Wellman.

Robert L. Studley, president of the National Wool Trade Association, reported that the trade had attained its quota of contributions to support this movement and turned over a check in full to the new treasurer. Arthur Besse, president of the National Association of Wool Manufacturers, reported for the list and quota committee to the effect that over one-third of the manufacturers' subscription quota had been attained and that there had been no single refusal from a wool manufacturer. F. R. Marshall, president of the National Association of Wool Growers, reported enthusiastic support of the plan passed by his association at its annual convention to raise promotion funds through a nominal assessment on every bag of wool shipped by its members.

The executive committee was given power to proceed at once to organize and to staff the headquarters of the Associated Wool Industries with the expectation that active promotional operations would be under way within a few weeks' time. The committee appointed B. M. Nussbaum, president of the United Advertising Agency, as promotional counsel; the agency will also have charge of the various advertising campaigns to be sponsored for the joint promotion of specific lines of wool products.

•

Fall Men's Wear at Current Levels

Fall, 1935, openings of men's wear lines have been made in many quarters. Prices average about 5% higher than those for the spring, 1935, season. In a general way the new figures are close to the current open market basis, some little readjustment both up and down being noted. Of course they are lower than a year ago.

As spring tapers off there is more need that something be done on fall, and sellers recognize that firmness is going to attract buying, wherefore an effort to make opening prices right.

American Woolen Co. priced wool worsted 9613-1 at \$1.52½ for fall against \$1.47 for spring; Shawsheen 8020 at \$1.72½ against \$1.57½; National & Providence 9001 at \$1.35 against \$1.30; Ayer 9056 at \$1.50 against \$1.42½; Weybosset 9270 at \$1.10 against \$1.05; Puritan 9205 at \$2.05 against \$1.97½.

•

Business Holds on Slow Side

The gold clause decision in February did not stimulate trading in wool goods as many had hoped, particularly since uncertainty on that point had been assigned as a reason for current quietness. On the same day as the gold decision, came a "theoretical" reduction of 10% in government controlled wools. This merely brought them nearer in line with the open wool market and was not a change which could be reflected in the price of wool manufactures.

Retail clothing sales all over the country were reported heavy during February. This aided the statistical situation and placed retailers in healthy position to go forward with their plans for spring promotions.

Early in March trade was quiet. There was some interest in tropicals and flannels but the secondary wave of spring buying is not likely until early April.

•

American Loses Five and Half Million

The annual report of the American Woolen Co., released Feb. 15, showed a loss of \$5,458,495 for 1934. This was higher than most in the field expected, though it was a foregone conclusion that there would be a substantial loss. The set-back was assigned to the lack of new business in the first part of 1934 which slowed mill operations and raised unit costs; to the decline in wool prices induced by lessened consumption; to severe competition in fabric production in an effort to run machinery and liquidate inventory.

The American liquidated its debt to banks of over \$5,000,000 during 1934 and it closed the year in a strong cash position and with great preponderance of quick assets over current liabilities. In 1933, it will be recalled, the company made a profit of \$7,053,088 while in 1932 it lost \$7,269,822. A check of its profit and loss since 1924 shows a net loss for the 11 years of \$28,500,000. The surplus at the end of 1923 (the largest in the firm's history) was \$33,596,000. In 1934 it is \$20,172,353.

•

Wool Blankets Open

All wool blankets for the new season were priced early in February by many prominent makers. The American Woolen Co. priced a 3 lb., 70 x 80 single, whipped edge, at \$2.75; sateen, rayon or silk bindings are 12½ to 30c. extra. In other quarters blanket prices range from \$3.20 to \$5.85. It is understood that scant advance business in all-wools has been done, although part-wools and cotton blankets have attracted a few orders.

•

Activity of Industry

Current statistics on wool consumption and mill activity follow, the activity percentage being based on single 40-hour shift, 5½ days per week. Increases in all except carpet lines are shown:

Wool consumed:	December	January
Total clean equiv. (excluding carpet)	22,147,000	22,196,000
Carpet wool (grease)	6,482,000	8,032,000
Looms (50" wider)..	79.8%	102.2%
Carpet looms	34.9%	45.7%
Combs	118.2%	123.8%
Worsted spindles ...	80.7%	97.7%
Woolen spindles ...	91.4%	109.6%

•

Wool Tops Little Change

The standard spot certificated top of the Wool Top Exchange was unchanged at 79c. on March 1 from Feb. 1. How-

ever in the interim it had dipped to 78c. on Feb. 8 and risen to 79.5c. on Feb. 15. The futures market moved narrowly with a tendency toward heaviness. Foreign top exchanges were fractionally lower at the end of the month.

•

Woolen Rags Get Set-Back

January prices for woolen rags proved a peak so far as the current movement is concerned. The rise was checked by the beginning of February and through that month under the indifference of mill buyers and the sag in wool prices, rag values fell off, soft woolens losing 2c. per pound. Five light merinos dropped to 20c. but recovered several cents. Knits were dull but relatively firm. New clips reacted 1 to 2c. during February. The month closed with better feeling as there was considerable mill sampling and some price recovery.

•

Wool Industry Briefs

Bids on 20-oz. O.D. Suiting, type C, for the Army (600,000 yd.), opened Feb. 18, ranged from $1.52½ to $1.78 with one bid of $1.97½. Chatham Mfg. Co. was low bidder, but only on portion; American Woolen Co. was next in line with $1.579 for the entire quantity.

Bids on 10½ oz. shirting flannel for the Army (744,552 yd.), opened Feb. 18, ranged from $1.034 to $1.1717. American Woolen Co. was low bidder on a 100,000-yd. lot, with William Whitman Co. next offering 250,000-yd. at $1.0417.

Late in February there was a spurt to wool sales in Boston due it is said to the government contracts for Army shirtings, suitings, etc. The weight of the finished goods asked for approached 1,500,000 lb.

Wool production in the United States in 1934 totaled 418,158,000 lb. of which 357,658,000 was shorn wool and 60,500,000 pulled wool according to Bureau of Agricultural Economics. This compares with total production of 428,921,000 lb. in 1933, 412,540,000 in 1932, and 438,328,000 in 1931. Weight of wool per sheep was 7.91 lb. in 1934, 8.15 lb. in 1933 and 7.77 lb. in 1932.

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Codes and Associations

National Association of Wool Manufacturers has issued a statistical report covering the year 1934 in wool manufacture, commenting on the story told by the figures and including a series of charts on machine activity and wool consumption.

National Association of Waste Material Dealers is holding its 22d annual convention at the Sherman Hotel, Chicago, March 18 to 21.

Uxbridge Worsted Co. was recently granted an exemption from code limitations on their looms on automobile fabrics, thus permitted to run a third shift of 40 hours. A similar exemption has been granted Pacific Mills, Rock River Mills, and Broad Brook Mills. The exemption ends May 18. Wilton Woolen Co. has similar exemption expiring May 28.

At a **meeting** of the recently elected Wool Textile Code Authority held early in March, Arthur Besse was reelected chairman and Walter Humphreys, secretary.

Clothing Code Authority has filed with the Wool Textile Code Authority a formal petition for change in terms, dating and shipping provisions designed to extend seasonal operations into longer periods. June 1 dating on fall goods delivered in April and May and Dec. 1 dating on spring goods delivered in October and November is sought (code now permits no dating), and "f.o.b. destination" is sought to replace current "f.o.b. mill."

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Wool Mill News

James J. Regan Mfg. Co, Rockville, Conn., plant has been sold to the E. L. Smith Machinery Co., Providence, R. I., and will be resold. The Regan plant specializes in the manufacture of woolen overcoatings and has been idle since the textile strike.

New England Woolen Mills Co., Thompson, Conn., has been chartered under state laws with capital of $50,000, to take over and operate company of same name at Norwich, Conn., Incorporators include Robert Kelley, Norwich.

Olson Rug Co., Chicago, will soon erect a $415,000 addition to be six stories, 135x155 ft., reinforced concrete faced with brick. The new building will include a high pressure boiler plant. Weiss & Neistadt are the architects; John D. Small, consulting engineer.

Laporte (Ind.) **Woolen Mills** have been sold to L. Bachman & Co., Inc., New York. The price was not made public. John Daniels, East Brookfield, Mass., and New York, will be in charge of the unit. Operations will be continued and the name will be changed to the Laporte-Daniels Woolen Mills, Inc. The mill was established 71 years ago by Samuel Fox, father of the retiring president, and has not suffered a shutdown in the last 28 years. It was one of the five largest fancy woolen units in the United States. Overcoating machinery from Daniels Mfg. Co. will be transferred to Laporte.

Forest-Pondicherry Co., Bridgton, Me., is remodeling the Forest mill for expected occupancy. The Pondicherry Mill has been running two shifts.

Medway (Mass.) **Mills, Inc.,** have been organized to operate a local woolen mill. Roland B. Hoag is president of company, and John Holbrook, 569 School St., Belmont, Mass., treasurer and representative.

Roubaix Mills, Clinton, Mass., were sold at auction on Feb. 21.

Waterloo (N. Y.) **Mills, Inc.,** are concluding arrangements with RFC for loan of $315,000, to be used for improvements in their mill, including equipment replacements, and for necessary capital for operation. Plant has been idle for a number of months. It is expected to resume production in the spring.

La France Industries, Philadelphia, Pa., are planning rebuilding of two buildings at local mill on St. Paul St., Frankford, recently damaged by fire. The units were used for production of cotton type rugs and for storage service, respectively. An unofficial estimate of loss placed it at $250,000.

Keystone Spinning Mills Co., Philadelphia, carpet yarns, will liquidate. The plant has been idle since January. It operates 30 sets of cards.

Pascoag, R. I.—Former Bowditch Mill, Sayles Ave., Pascoag, manufacturer of cotton print goods, has been purchased by Austin T. Levy, president, **Stillwater Worsted Mills,** Harrisville, R. I., who is reported planning to use the mill, a two-story structure, in near future, in connection with the Harrisville plant.

Jules Desurmont Worsted Co., Woonsocket, R. I., has arranged for change of company name to the **Riverside Worsted Co.**

Rock River Woolen Mills, Janesville, Wis., has lately installed 10 additional looms, bringing its total to 70, which are running two shifts on auto cloths.

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Wool Mill Finances

Cleveland Worsted Mills Co. reports net loss of $245,949 for 1934, compared with net profit of $351,145 for 1933.

William Whitman Co. reports profit for 1934 of $8,877 against $140,030 for 1933.

New Jersey Worsted Mills reports net loss for 1934 of $580,295 compared with net loss of $192,815 for 1933.

Bigelow-Sanford Carpet Co. reports net profit for 1934 of $173,023 against $1,140,680 for 1933.

Patrick Carr & Sons, woolen waste, Philadelphia.—Receivers have been authorized by the court to liquidate if they believe best. There was a net operating loss in the business last year of $4,543.

Thayer Woolen Co., Oxford, Mass., woolen goods, has filed petition in the Federal Distric Court for authority to reorganize. Liabilities are $133,000 and assets by book value amount to $134,000.

Dominion Woolens & Worsteds, Ltd., Toronto, will hold a meeting March 27 to consider financial reorganization whereby bondholders will receive a smaller bond and also preferred stock.

WOOL IN THIS ISSUE

	page
Hamilton at Southbridge Bought by J. P. Stevens	91
Ring-Frame Production Calculations	94
Ratching for Mohair and Other Worsted Mill Kinks	96
Camp Blankets—Constructions and Opportunities	99
Use of Standard Batches in Application of Latex	104
N.A.W.M. Reelects; Retains Machine Limitations	117
Dry Marks on Carpet	120
Needle-Point Card Grinder	124

TEXTILE WORLD'S

Rayon Digest

ADD international notes: Spain has officially adopted the term "rayon." Pretty soon this record will resemble the famous copyright line with its reference to "all countries including the Scandinavian." Incidentally—in fact, entirely incidentally—this always seems to get a laugh, although we could never figure just why.

To get back to "rayon": One of our associates suggests an article giving a complete international picture of the acceptance of this term. The idea appeals to us. Even at the risk of great personal inconvenience, we would consent to undertake the assignment. Possibly the necessary exploratory trip could be financed by RFC funds. Or should it be AAA—out of the processing tax, for instance?

Barkis is willing.—*Editor.*

Good Yarn Month Despite Gold Worry

Irrespective of whether or not it was true that a 100,000 lb. order for yarn was placed immediately following the gold decision, the movement of rayon through February was very satisfactory and the market entered March in a healthy position as regards commitments. Yarn factors said that sales pressure had eased up since January, which month was exceptionally active, and they welcomed the slackening, as enabling them to operate more steadily. At the end of February the chief producers were sold up on more than half of their March capacity. Orders came chiefly from dress goods weavers; interest centered on chalky yarns and in some cases producers could not meet demand for these.

Prices held firm, but there was little talk of any early advance. Producers generally feel they will fare better if prices maintain the status quo. Knitters did scant buying during February; a few underwear firms contracted for immediate needs but generally interest was light.

•

DuPont Forms Argentine Firm

Confirming market reports long current, E. I. duPont de Nemours & Co., parent company of duPont Rayon Co., announced March 9, that a company was being formed for manufacture of viscose process rayon in Argentina. The company which will include duPont associates in Argentina and representatives of the Comptoir des Textiles Artificielles, of Paris, will be known as "Ducilo" S. A. Productora de Rayon; a plant employing 1,000 will be built near Buenos Aires.

•

Study Plant Hazards

Occupational hazards in rayon plants in Pennsylvania will be the subject of a study to be made by the Industrial Research Department of Bryn Mawr College, on behalf of the Pennsylvania State Department of Labor and the State Federation of Labor, it is announced. It is understood the data will be used as basis for whatever legislation may be necessary.

•

1934 Exports $4,030,716

Rayon merchandise exported from the United States in 1934 totaled $4,030,716 of which yarn shipments aggregated 2,509,067 lb., valued at $1,322,595, according to figures compiled by the Bureau of Foreign and Domestic Commerce of the U. S. Department of Commerce. The December 1934 exports totaled $307,624 of which rayon yarn was more than 33 1/3%, being 207,869 lb., valued at $105,460. In the year's total yarn exports were largest, with dress and piece goods second and "other manufactures" third. Knit underwear exports for the year were 47,260 doz., value $178,563; hosiery totaled 121,477 doz., value $253,400, with women's hosiery having the lion's share of that total.

•

Judge Signs Furness Reorganization Order

Reorganization plans for the Furness Corp., rayon manufacturers of Gloucester, N. J., were legally approved Feb. 25, when Federal Judge John Boyd Avis, Camden, N. J., signed an order making the plan effective under section 77b of the Bankruptcy Act. Receivers were asked to file their final accounting March 8. The chief provisos of the reorganization are that the firm will be known as the Gloucester Rayon Co., with $85,000 capital and 4,000 shares of preferred stock; attorneys for the reorganization's sponsors told the court they had $140,000 in subscriptions from responsible parties to give the firm sufficient working capital. As previously stated in these columns the agreement includes a cross-licensing pact between Industrial Rayon Corp. and the new Gloucester Rayon Co. by which patent rights of both firms are made mutually available. The Industrial Rayon Corp., it was stated to the court, has put up $105,000 of the current subscription total, getting in return for this a certain amount of the new first preferred stock and enough of the new common to give Industrial 32% interest in that stock.

Jacquard fabric developed at Georgia School of Technology having cotton warp and rayon filling. The rayon yarn used in this textile was made from the slash pine pulp recently developed by Dr. Chas. H. Herty as a base for synthetic yarn textiles.

The court was informed of the existence of a contract dated July 12, 1932, between Du Pont Rayon Co. and Furness Corp. giving Du Pont the right within ensuing three years to apply at any time for "divisional interest" in a certain Furness patent having to do with use of rayon in manufacturing automobile tires. Judge Avis then ruled that the reorganizers would take over any obligation existing under this contract.

•

Propose to Slay That Resistance Dragon

A psychological study of consumer reaction to rayon, involving 8,000 interviews, with a view to ascertaining the degree of current resistance to this fibre has been proposed to the leading yarn companies by the Research Bureau of Retail Training of the University of Pittsburgh, through David Craig, director, it is learned. The survey would cost upward of $26,000 and would take seven months. The key aim would be to establish what are the attitudes of those who favor rayon, and of those who dislike it, how have they reached these attitudes and under what circumstances unfavorable attitudes could be changed.

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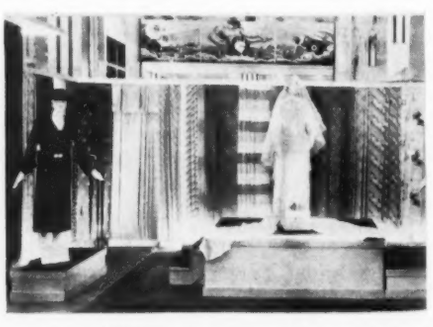
—And Celanese Lost

The long-fought and costly litigation between Courtaulds Ltd. and British Celanese Ltd., in London, over patents for rayon manufacture, concluded last month when



An exhibit of rayon fabrics and styles shown at International Trade Fair, Grand Central Palace, New York, last month, by Viscose Co.

the House of Lords refused to upset a revocation of the Celanese patents. The court ruled that the patents had been anticipated by prior specifications and lacked patentable matter. The litigation was instituted three years ago. A few of its statistics are: 35 days in Chancery Court; 17 days in Court of Appeal; and 19 days in the Supreme Tribunal; total cost exceeded $400,000.

•

World Rayon Production

Estimates of world rayon production by countries, as supplied by our Manchester (Eng.) correspondent, follow:

(*In thousands of pounds*)

	1934	1933
United States	210,331*	208,530
Japan	150,194	99,440
Italy	106,546	81,741
Germany	91,410	68,200
United Kingdom	88,870	80,036
France	64,900	57,200
Netherlands	21,010	23,650
Switzerland	10,450	10,560
Canada	10,164	7,612
Poland	9,658	8,074
Belgium	9,416	9,603
Czechoslovakia	6,380	5,500
Spain	4,950	4,400
Brazil	2,200	1,650
Austria	1,210	1,452
TOTAL	788,855	668,349

*From the *Textile Organon.*

The viscose process is estimated to have supplied 87.15% of the total in 1934, and acetate 8.66%.

•

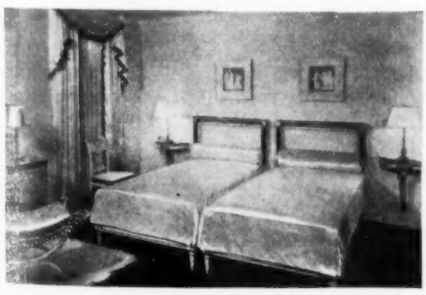
It's a "Rayon League of Nations"

Another country heard from! With the news that Spain has followed France's lead in officially adopting the term "rayon" for merchandise made from man-made yarns, the international line-up now has become quite impressive. Rayon has been accepted as the generic term in the following countries: United States, Great Britain, Italy, Japan and France. While full observance of the term is not yet followed in any of these nations, the trend is definitely in that direction.

•

The Name's the Thing!

The movement toward increasing stress on rayon brand names in promotion, which has been signally successful in retail stores of late, advanced further in February when R. H. Macy & Co., New York, began to feature yard goods identified as Crown Tested rayons, and made from yarns of the Viscose Co. The brand name was highlighted in the store's advertising. A short time previously this store had given promotional emphasis to Chardonize run-resistant underwear made from Tubize Chatillon Corp. yarns. Merchandise made from American Bemberg Corp. yarns has been quite extensively promoted under the name of Bemberg by various stores, and of course the Celanese lines have been so identified for a long time.



Modern bedroom outfitted with rayon materials shown at International Trade Fair, Grand Central Palace, New York, last month, by Du Pont Rayon Co.

RAYON IN THIS ISSUE

	page
TEXTILE WORLD's Guide to Southern Textile Show	78
Whizzing Rayon—Control Needed in Extracting	97
Should Pool Information on What Makes a Crepe	100
Tale of the Shirt—Fancy Weaves, Woven Colors	107
Stretch Control for Slashers	124
Non-Corroding Rayon Dryer	125
Silk and Rayon Shuttle	125

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Spun Rayon Notes

The Italian Government is strongly supporting efforts of rayon producers there to make the country independent of foreign textiles, and in line with this policy Premier Mussolini recently attended the inauguration of the Snia Viscosa plant at Magenta, which reopened to produce staple fiber.

There are indications both in Great Britain and here that rayon producers are no longer willing to confine spun rayon to its earliest limits either as regards method of manufacture or market. The following comment by Major A. B. Shearer of Courtaulds Ltd., in the Manchester Guardian Commercial is significant: "Staple fiber is not a substitute for cotton. It has definite characteristics of its own and will not be used in place of continuous filament yarns but to a large extent it will be used in fabrics and garments now made from spun silks or schappes, and combed or carded cottons. Many knitted garments are now available in spun rayon yarns and their popularity seems certain."

Waterman Currier & Co., Inc., have been appointed sales agents for Sase spun rayon yarns by the Fitchburg Yarn Co., spinners, and will represent Fitchburg in the territory covered by that firm's former New York sales office.

•

Industry Briefs

Textile Exhibits at the Industrial Arts Exposition, in Rockefeller Center Forum, New York, April 15 to May 15, will include various types of merchandise made from synthetic yarn. It is announced that the Tennessee Eastman Corp., acetate yarn producers, will be among the exhibitors.

Japan's rayon output for 1934, estimated at 150,000,000 lb. against 90,428,000 lb. in 1933, has broken all records, it is reported by U. S. Vice Consul R. M. McClintock, Kobe. Continued increase in production is scheduled by Japan for the current year.

Capacity crowds defied a heavy February rain to attend a fabric fashion show in the auditorium of the Broadway Department Store, Los Angeles, which show highlighted merchandise made from yarns of the Celanese Corp. of America.

A plea to abandon the word "synthetic" as obsolete and incorrect in describing rayon merchandise, was made in literature issued at the Chicago Textile Exhibit held recently by the Chicago Wholesale Market Council. The article protested that "synthetic" implies inferiority or substitution.

The use of rayon as a wedding textile now is almost standard. Reports from several fashionable weddings in Paris last month told of rayon acetate being the prevailing fabric for the bridal gown and the bridesmaids' dresses. The fabric for the bridal dress was a soft pebbled dull white rayon crepe. Rayon styles for weddings this spring lean definitely to the dull surface acetates in Paris, reports the Paris office of the Du Pont Style Service.

The housing shortage at Meadville, Pa., which, rumor has it, impeded development of the Viscose Co. plant and other local industries, may soon be solved. FHA officials at Washington are studying plans and specifications for the construction of 200 low rental homes there.

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Rayon Mill News

United States Rayon Corp., Belmar, N. J., is in the hands of R. K. Thistle and Philip Cohen, receivers.

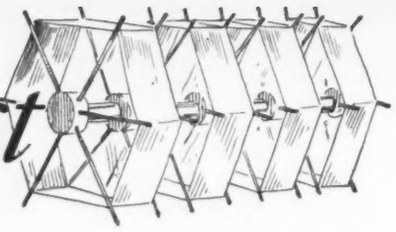
Raynit Mills, 1660 East New York Ave., Brooklyn, N. Y., have taken over former one and two-story plant of **E. H. Kluge Weaving Co.,** 716-26 Palisade Ave., West New York, N. J., recently acquired by the Raynit Realty Corp., an affiliated organization, for a reported consideration of $35,000. The plant totals about 80,000 sq.ft. floor space, and will be remodeled and improved for a new mill. Present Brooklyn plant will be removed to new location and capacity increased. Project will cost close to $100,000, with machinery.

Burlington Mills, Inc., Burlington and Greensboro, N. C., has purchased Gloria Textile Mills, Johnston City, Tenn., for $200,000. New machinery for weaving fine rayon fabrics will be installed at an expense of $250,000.

E. I. duPont de Nemours & Co. reports net profit for 1934 of $40,475,030, against $32,921,253 in 1933. Earnings of the company's foreign affiliates showed substantial gains. **DuPont Rayon Co.** has lately ordered from B. F. Sturtevant Co. an air conditioning system to be installed in its Spruance Plant No. 2 now under construction at Ampthill Va.

TEXTILE WORLD'S

Silk Digest



LAST June, in these columns, we emphasized the importance of the International Conference on Raw Silk, tentatively scheduled to be held in New York in the fall. Fall has come and gone but the conference has not. The need still exists, however, and is becoming more acute each month.

At the same time, we referred to the necessity of eliminating differences of opinion among the various groups. Whatever lack of harmony is holding up the conference should be smoothed out at the earliest opportunity through an open-minded approach to the problem, a thorough airing of differences, and an appreciation of the need for prompt action. Delay is expensive to all concerned—and may do more to hurt the position of silk than all the Battles of the Fibers ever waged.—*Editor.*

Silks of 1935 Pass In Review

The Silk Review is on. This coast-to-coast promotional event, planned to increase the popularity of the Queen of the Fibers, and specifically the Spring, 1935, silks, among consumers, opened Monday March 18; it continues throughout the week. The event, which is being held by the International Silk Guild of which R. D. Jenkins is managing director, includes all the most successful features of the Silk Parade of last fall, together with numerous innovations.

The scope of the review may be gaged by the fact that 5,000 stores in 40 States as well as leading stores in Canada and Havana are cooperating. Silk is highlighted throughout the various departments of each store, in window displays, educational exhibits, merchandising tie-ups—all supported by a widespread publicity and advertising campaign. The Guild has distributed hundreds of thousands of copies of the official Review poster, shown herewith,

these being used by stores in decorative effects. Other literature distributed includes a revised 1935 edition of the Guild's Better Selling Booklets, and vast quantities of material on the history and merchandising of silks.

•

Silk-Rayon Position Analyzed by F.T.C.

Costs, investments and rates of return in the silk and rayon branch of the textile industry during 1933 and part of 1934, are minutely analyzed in a report of the Federal Trade Commission, covering this textile branch which has just been issued. The report gives results of an inquiry which was ordered by President Roosevelt last September. The commission weaving branch which was among those covered showed a loss for the first half of 1933, and a profit rise of more than 100% between the July-December 1933 period and the July-August 1934 period. Eleven firms throwing silk and rayon reported: 6.28% profit in Jan.-June 1933; 0.20% loss, July-Dec. 1933; 2.76 profit Jan.-June 1934 and 1.37% loss July-Aug. 1934. Reports from 43 companies throwing or spinning silk or rayon on commission showed 3.25% profit for Jan.-June 1933; 0.60% profit July-Dec. 1933; 2.01% profit for Jan.-June, 1934 and 0.74% loss July-Aug. 1934.

Among the less favorable showings was that made by 43 companies weaving their own silk and rayon. Return on total investment for this branch was 0.79% first half of 1933 and 7.62% second half; 0.70% loss the first half of 1934; and 2.64% loss the July-Aug. period. For this branch raw material costs fell from 52.47% in Jan.-June 1933 to 49.87% in July-Aug. 1934 while the percentage of labor cost rose from 18.50% to 24.90% during the same period.

The return on total investment of the silk and rayon commission weavers follows: Jan.-June 1933, 1.86% loss; profits of 3.58%, 5.17% and 7.20% were shown in the second half of 1933, the first half of 1934 and the July-Aug. 1934 period, respectively.

Commenting on its findings, the Commission reported that the 43 companies weaving their own silk and rayon could have cut hours 22½% or raised pay 29.03% without suffering a loss on sales. With respect to the 12 companies throwing and weaving their own silk and rayon the Commission held that, during the second half of 1933 a 7.5% decrease in hours worked or an 8.11% increase in wages would have left the firms with some profit on sales, but a 10% decrease in hours equal to an 11.11% increase in wages would have resulted in a loss.

•

Buying Lull Halts Silk's Price Rise

The upward climb of raw silk prices which has been fairly steady since last summer slackened appreciably in February and the end of the month showed a slight decline. Lack of demand from either hosiery or broadsilk manufacturers was responsible for the turn. The price of 13/15 white 78%, key number in New York Commodity Exchange trading, was $1.48½ on Jan. 25. The upward trend halted the following week. Levels maintained the status quo until the third week of February when a general weakness was evident and on Feb. 25, the key number had receded to $1.40.

Importers were hopeful that the reversal is nothing more than a temporary reaction to a mid-winter lull. It was pointed out that hosiery mills have only small stocks of silk on hand and broadsilk mills have none at all; any spring pick-up in call for merchandise, therefore, would bring a sharp acceleration of raw silk movement resulting in stronger prices. The end-February drop in silk quotations brought a fillip of orders from broadsilk mills, but these were wholly speculative and insufficient to help the market.

•

Throwsters Raise Commission Prices

Commission throwing prices were advanced from 8 to 10% by various leading throwsters during February, and it was indicated that effort would be made to hold to the higher levels even though it might mean some loss of business. Throwsters pointed out that prices had been weakening steadily through 1934 with the result that recent months have seen numerous small firms forced out of business and have brought losses to the large firms. The price increase is about 5c per lb.

•

Federal Uncertainty Slows Up Fabrics

Uncertainty as to national affairs, particularly regarding the Supreme Court's gold standard decision, made for hesitant buying in the broadsilk trade through February, and the end of the month found the market somewhat discouraged about the immediate outlook. Fabric demand slackened in late January and this trend continued through last month, except in a few outstanding lines.

As March opens taffetas are still a leader and are moving actively for dress and piece goods markets. Sheers, especially in navy, and cantons come next in favor. However the volume of business is small and prices are weak. Firms report sharp price reduc-

tions even on the important numbers to effect turnover.

The broadsilk outlook is further clouded by the fact that Easter is late, April 21, which means that the colorful spring merchandise which usually follows Easter will be some weeks behind this year. However, cutters and stores have very small stocks, and an early spell of spring weather would probably spur buying quickly.

•

Asks Tariff Protection

Adequate tariff protection for American textiles against competition of imports from Italy is essential to prevent disaster to the home indusry, it was stated by Peter Van Horn, president of the National Federation of Textiles, Inc., in an affidavit submitted March 6 to the Committee on Reciprocity Information of the Tariff Commission. This committee is holding hearings on a proposed trade treaty with Italy. Mr. Van Horn said wages in American silk and rayon mills are four to five times those in Italy, adding, too, that the skill of the Italian workmen permits rapid productivity, allowing for very low selling prices.

•

Deliveries off 12.0%

Raw silk deliveries in February, 1935, were 12.0% lower than in January and 6.9% higher than in February, 1934, according to figures made public March 6 by the Planning and Research Bureau of the National Federation of Textiles, Inc. Key figures, in bales, follow:

	Imports	Approx. Deliveries	In Warehouse End of Month
Feb. 1935.	41,943	41,732	48,727
Jan. 1935.	30,025	47,443	48,516

•

Silk Code News

Charges that the present scale of silk code assessment is working undue hardship on small silk firms were made by numerous factors last month following removal of the Blue Eagle from the New York offices of four firms for failure to meet assessments. It is stressed that downtown firms are free from assessment while uptown concerns who compete with the former are compelled to pay.

An amendment to the silk code strengthening the legal immunity of individual code authority members as regards Code Authority Acts has been proposed.

Four code changes covering selling agents, commercial bribery, thread prices and selling terms for woven labels were approved by the NRA Feb. 13.

R. C. Kramer, president, Belding Heminway Corticelli Co., New York, confirming that a complaint against the firm had been filed with the Code Authority, said the complaint related to prices and added that the company defends its stand on the ground that it prefers price stability to momentary advances.

Ward Cheney, president Cheney Bros., New York, has been reelected president chairman of the Velvet Code Authority.

Black and white printed satin dress featured at recent showing by Chicago Wholesale Market Council. The fact that portions of the pattern are cut out to make decoration for the dress is an idea which has many possible adaptations.

•

Silk Industry Briefs

The Silk Manufacturers Association, Paterson, N. J., at its annual meeting recently reelected Benjamin Kaminsky, of the National Silk Manufacturing Co. as president. Max M. Baker, executive secretary of the organization for many years, resigned that post because of differences over policy in the organization. Morris Warhaftig was elected treasurer and David L. Cole was chosen attorney for the organization.

Jack Arnoff, sales manager of Shirley Silk Co., has been reelected president of the Silk & Rayon Fabric Salesmen's Association, at the organization's recent meeting in New York.

Alexander Williams was elected manager of the Paterson district, American Federation of Silk Workers, by the narrow margin of 100 votes over Sarkis Phillian. Mr. Williams succeeds Eli Keller.

The Department of Labor of the State of Virginia continued through February its efforts to settle the strike at the Majestic Silk Mill, Buena Vista, Va.

SILK IN THIS ISSUE

	page
Control Important in Extracting Crepe Yarns	97
New Needs Spur Call for Direct-Running Yarn	115
Blotches on Hosiery	120
Washboard Knitting	120
Unevenness in Silk Yarn	120
Defects Due to Carpet Beetle	121
Silk and Rayon Shuttle	125

Silk Mill News

Armstrong Silk Corp., New London, Conn., operating the former Corticelli silk mill since that company's business was taken over by Belding-Heminway, has changed its corporate title to **New London Fabrics Co.**

Belding-Heminway-Corticelli Co., Putnam, Conn., is shipping some unused equipment from the Putnam mill to its auxiliary mill in Petaluma, Calif., which will be equipped for emergency manufacturing and for processing of raw silk received from the Orient.

Proper Maid Silk Mfg. Co., Inc., Amsterdam, N. Y., recently organized, plans operation of a local mill. New company is headed by Richard Elsemiller, Fort Johnson, N. Y., and Albert J. Van Skiver, 24 Pearl St., Amsterdam.

Susquehanna Silk Mills, Sunbury, Pa., are carrying out an expansion program at branch mill at Marion, Ohio, including installation of 50 new spinning frames and auxiliary equipment.

Andomar Silk Co., Peckville, Pa., is considering early rebuilding of portion of mill recently destroyed by fire. Loss over $30,000, including equipment.

Bedford (Va.) **Weaving Corp.** will be the operating name of the new local mill of the Bedford (Va.) Mills Corp., which has taken over former local plant of the Armstrong Mfg. Co., as previously reported. General contract has been let to C. W. Carter, Bedford, for modernization and alterations in structure, estimated to cost over $30,000. The plant will be located on a 4-acre tract of land on the Norfolk & Western Railway, and will be equipped for rayon manufacture. Klein Brothers, New York, N. Y., will operate the new company. Bryan & Terhune, 2 Rector St., New York, are engineers.

Windsor Silk Mills, Huntingdon, Quebec, is opening a plant for the manufacture of broad silks, with an initial unit of 100 looms, and to employ 150 workers.

J. B. Martin Co., Norwich, Conn., is establishing a plant at St. Johns, Quebec, for the manufacture of velvets.

•

Silk Mill Finances

Windham (Conn.) **Silk Co.** has reduced its capital stock from $300,000 to $150,000.

Riverside Silk Mills Ltd., Galt, Ont., reports net earnings for 1934 of $71,806, against $53,637, in 1933.

Belding - Corticelli, silk manufacturers, Montreal, Que., report profits of $267,156 for 1934 compared with $250,616 for 1933.

TEXTILE WORLD'S

Knit Goods Digest

IN recommending the study of the possible development of a "practical and legal" method of disposing of fully depreciated and obsolete equipment, the Hosiery Code Authority, through a special committee, has touched a vital problem. It is one which has engaged the attention of various branches of the textile industry for a long time. We recall a proposal to this end in the woolen and worsted field several years ago. More recently, a private enterprise has operated in this direction in the cotton industry. Just now, in Lancashire, an elaborate plan is in the experimental stage.

The obvious difficulties inherent in such an undertaking should not discourage the study of it. The Hosiery Code Authority is to be commended for its approach to the problem. Its final conclusions will be awaited with interest by all textile manufacturers.—*Editor.*

Two Conventions At Philadelphia

The program for "Knitting Arts Week" in Philadelphia, April 22-26, as it now shapes up, indicates considerably more activity in the Quaker City than had originally been expected. The Underwear Institute announces that it will again cooperate with the National Association of Hosiery Manufacturers in staging the Knitting Arts Exhibition at the Commercial Museum, and also will hold its annual convention in Philadelphia that week. The Institute convention will be held at the Commercial Museum, April 25.

The reservations for the exhibition up to early this month were about equal to last year's total, assuring that the aggregate displays would exceed those of 1934. Among the feature showings projected by the hosiery association will be a display of imported Japanese hosiery, aiming to demonstrate the type of low-end competition the industry faces, and a raw silk display modeled along novel lines. The hosiery association annual meeting will be held at the Museum Wednesday April 24; the program will be confined to addresses by officers and general discussion. Tentative plans have also been made for a general industry conference on hosiery code matters to be held at the Museum probably on Monday April 22.

•

Hosiery Authority Seeks Old Machine Outlet

Hosiery industry attention focussed on the Hosiery Code Authority on two main points this month—first, the projected plan to dispose of fully depreciated and obsolete equipment; and, second the 1934 hosiery statistics recently made public. With respect to the first point, a committee reported at the Authority's February meeting in Washington that depreciated and obsolete equipment is a threat to the industry so long as it remains available since there is a temptation to use it, and that it produces such inferior merchandise as to challenge the standards of the industry. Methods for disposing of this equipment will be studied, and consideration will be given to the possibility of selling the equipment to those foreign countries whose staple hosiery needs are of the lowest end merchandise.

The statistics announced by the authority showed that American hosiery production in 1934 totaled 104,000,000 doz. pairs, of which 30,500,000 was full-fashioned and the balance seamless hosiery of various types. Year's shipments totaled 103,400,000 doz. pairs against 105,000,000 in 1933. The Authority points out in this regard that 1933 was an inflationary year and that shipments in 1934 were the highest since 1929 excepting 1933. Stocks on hand at end of 1934 were 17,000,000 against 16,000,000 at the end of 1933.

December hosiery data by dozens as reported by the Bureau of the Census of the Department of Commerce follow:

	Knit	Shipments	Stock on hand end of month
Nov. 1934	7,250,795	6,854,904	12,344,763
Dec. 1934	6,484,376	7,624,209	12,388,187

•

Ringless Patent Basis of Test Suit

Lines of battle to clear up the mixed legal situation regarding ringless hosiery were definitely drawn with the news at the end of February that Julius Kayser & Co., and the Textiles Patents Corp., Philadelphia, had brought suit against Rosedale Knitting Co., Reading, Pa. The complaint charged infringement of the patent which the Textile Patents Corp. holds for a group of manufacturers. The court was asked to issue an injunction to prevent further infringement and an accounting of damages and profits also was sought.

Meanwhile, the Textile Patents Corp. made known that 39 hosiery manufacturing companies are now licensed under the three-carrier patent which was issued last summer to Charles Kaufman of Julius Kayser & Co. It is understood that other infringement suits are pending though it is unlikely any action on these will be taken until a ruling is made in the Rosedale suit.

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Trunk Shorts for Men

What may prove to be a new style trend of major significance in men's underwear developed early this month with the arrival of trunk-type shorts. Coopers Inc. of Kenosha, Wis., placed on the market a line called "Jockey Shorts," with a full combed knit rib and self-fabric shirts, each unit retailing at 50c. P. H. Hanes Knitting Co., Winston Salem, N. C., announced a line of trunk style shorts in two grades to retail at 35c. and 50c. respectively.

•

Underwear Prices Rising

Opening February with market tone generally firm, underwear mills tended toward higher prices as the month advanced, and there were prospects that a moderate gain might register throughout the lightweights by mid-March. Certain lightweight firms advanced underwear prices slightly in late February. Ribbed underwear manufacturers reported fair buying and as stocks are being held to demand ratio, this was sufficient to keep price tone steady.

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Knit Goods Brevities

"Hosiery outlook at present is better than it has been in a number of years," declared Hugo Hemmerich, general manager, Berkshire Knitting Mills, Reading, Pa., in a report issued by the Reading Chamber of Commerce.

Anniversary week was observed the third week of February by the Blood Knitting Co., Amsterdam, N. Y., marking the completion of 40 years of knit goods manufacture. John Barnes and John R. Blood started the firm in 1895.

Plans for the long-awaited study of homework production in the outerwear mills are now definitely under way, following the appointment by the NRA of a commission to undertake this task. The commission will gather data on all aspects of outerwear homework and report to NRA before May 15 on the best methods of enforcing the homework provisions of the code.

Underwear manufacturers seeking code exemptions are asked to make application first to their group chairmen, who will forward the request to the Underwear Code Authority with recommendations. Roy A. Cheney, vice-chairman of the Code Authority, says observance of this requirement will serve to expedite actions on requests.

Reduction in code overlapping is still a main aim of the Hosiery Code Authority; in line with that policy the authority reports that, as only 3 out of a total of 27 hosiery mills making their own paper boxes, do so for other than their own use, a friendly arrangement to avoid conflict, is being developed between the Hosiery Authority and the Set-up Paper Box Code Authority.

Underwear Conflict Due for Show-Down

There were definite signs during February that the conflict between underwear manufacturers proper and the makers of circular knit rayon fabric for the underwear trade, is approaching the point where it may soon be solved by official action. On one hand, the Underwear Code Authority is prosecuting a prominent tubular fabric knitter on charges of violating the NRA, and the case is being heard in the Commercial Frauds Courts, New York City. On the other hand, the 62c price for some circular knit underwear fabric on the market is bringing hints that this level violates the code provision against "selling below cost" and that the matter may be brought before the Code Authority before long.

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Knitting Financial Notes

Profit and loss reports of a number of mills follow:

	Year's Profit 1934	1933
Bradley Knitting Co., Delavan, Wis.	$68,000	*$306,661
Durham (N. C.) Hosiery Mills.	47,905	157,894
Jantzen Knitting Mills, Portland, Ore.	163,446	105,434
Federal Knitting Mills Co., Cleveland, Ohio	121,363	217,458
Phoenix Hosiery Co., Milwaukee, Wis.	82,466	286
Real Silk Hosiery Mills, Indianapolis (preliminary)	*350,761	174,947
Winsted (Conn.) Hosiery Co.	46,902	89,018
Munsingwear, Inc., Minneapolis	*20,876	287,269
Interstate Hosiery Mills, New York	400,421	462,618
Magnet Mills, Clinton, Tenn.	7,786	94,806
Gotham Silk Hosiery Co., New York	*274,745	96,400
Davenport (Iowa) Hosiery Mills	57,988	179,834
Woods Mfg. Co., Toronto, Canada	232,020	170,617
Penman's, Ltd., Montreal, Canada	274,591	277,511

*Indicates loss instead of profit.

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Knitting Mill News

Howard Knitting Mills, Inc., Beverly, Mass., recently organized with capital of $10,000, plan operation of local mill. Louis Tielis is president and Saul Silver, 15 Munroe St., Beverly, treasurer.

Leicester Knitting Mills Corp., Boston, Mass., recently organized, is said to be planning early operation of a mill in vicinity of Leicester, Mass. Coleman T. Bahn, 256 Corey Rd., Brighton, Boston, is president and treasurer.

Lancer Knitting Mills, Inc., Union City, N. J., recently organized with capital of $50,000, plans operation of local mill. New company is represented by Albert A. Margolies, 988 Bergenline Ave., Union City.

Dinberg Glove & Mitten Co., Ogdensburg, N. Y., has completed removal of its equipment to the former plant of the McIntosh Glove Co.

Tower Hosiery Mills, Burlington, N. C., are building new one-story addition at cost of $125,000 which will practically double their floor space. Machinery additions will comprise 12 new full-fashioned machines bring total to 28.

Larkwood Silk Hosiery Mills, Charlotte, N. C., have awarded general contract to the Wadesboro (N. C.) Construction Co. for two-story addition, designed to double present capacity, and superstructure has begun. George N. Rhodes, Charlotte, N. C., is architect.

Thompson Hosiery Mills, Graham, N. C., began operations late in February with machines of the H-H spiral, 25 type. Fifteen more machines are to be installed at an early date.

High Falls (N. C.) **Mills, Inc.**, recently organized with capital of $100,000, plan operation of local hosiery mill. Arthur Ross, president, Tip Top Hosiery Mills, Asheboro, N. C., is one of the incorporators of the new company.

Pilot Full-Fashioned Mills, Inc. Valdese, N. C., have awarded general contract to J. M. Brinkley & Son, Valdese, for new one-story top addition to present one-story dye works 53x58 ft., estimated to cost over $20,000, with equipment.

Frieden Knitting Mills, Cleveland, Ohio—Machinery and equipment of this company, which recently was declared bankrupt, and other assets at mill at 13920 Union Ave., will be auctioned.

Chalfont (Pa.) **Hosiery Mills** will be enlarged according to Lichten Bros., operators.

Artex Knitting Mills, 106 North Third St., Philadelphia, Pa., have leased a floor in Buildings Nos. 3 and 4 of the Powell Mills, Coral and Hagert Sts., and will occupy for new plant.

Courtland Hosiery Co., Philadelphia, Pa., recently organized by Joseph Riedland, formerly local manager for the Gotham Silk Hosiery Co., and associates, has arranged for lease of the local Gotham company mill at Fifth and Courtland Sts., and will operate on full-fashioned hosiery. Mr. Riedland will be president of new company. The Gotham company has two other mills in Philadelphia.

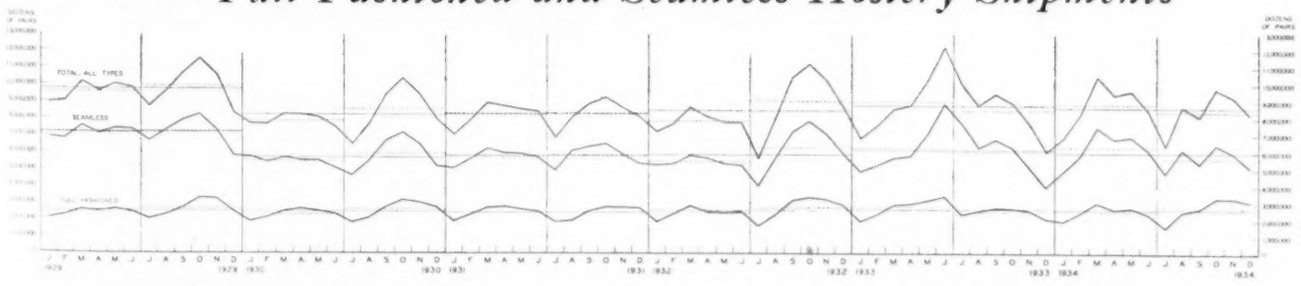
Joseph Gilardone, formerly superintendent of Levan-Gehrke Textile Mills, Reading, Pa., has gone into half-hose manufacture on his own account. He has renovated and will occupy the building formerly used by the D. S. Kelchner Hosiery Mills at Richmond and Poplar Sts. About 40 will be employed.

Jac Feinberg Hosiery Mills, Rock Hill, S. C., are considering construction of one-story addition, estimated to cost $25,000, with machinery.

KNIT GOODS IN THIS ISSUE

	page
Knee-Length Hosiery Opens New Selling Field	95
Spiral Float for Seamless Knitting Machines	98
3-Carrier Work Spurs Call for Direct-Running Yarn	115
Outerwear Show—Survey of Machines and Yarns	116
Outerwear's Record Dinner Concludes Convention	117
Blotches on Hosiery	120
Washboard Knitting	120
Hosiery Defects Due to Carpet Beetle	121
Lint on Knitting Machines	121
Knitting Machinery	124
Industrial Sewing Machine Drive	124
Full-Fashioned Machine Attachments	125

Full Fashioned and Seamless Hosiery Shipments



Trend of shipments of full-fashioned and seamless hosiery monthly through the six-year period, January, 1929, to December, 1934, is presented in this chart which has been developed by the Hosiery Code Authority. The figures from January, 1929, to June, 1933, are estimates from reports of the Bureau of the Census; figures after June, 1933, are based on mill reports submitted directly to the Code Authority. The chart was published in the current statistical bulletin of the Hosiery Code Authority as part of a greatly extended statistical service for the industry.

TEXTILE WORLD'S

Processing Digest

RECENTLY we were asked by one of our readers to give some specific examples of textile developments which were the direct result of cooperative research. It was less difficult to cite cases where individual companies have found that research has paid big dividends than to show instances in which cooperative research has proved of direct value to groups of textile manufacturers in this country. In England, however, as a result of cooperative research, a number of new products are now being produced commercially. Likewise, improved methods of manufacturing and processing textiles have been made available.

The research worker is seldom a salesman; more likely than not, he himself will say that it may be many years, if ever, before his work culminates in a commercial product or process. Cooperative textile research is a comparatively new venture, just a little more recent in this country than in England. Already British textile manufacturers are benefiting from the work carried out by Shirley Institute, the Wool Research Association, and other organizations. We are confident that the seeds of cooperative research which have been sown in this country will begin to bear fruit much sooner than one would be led to anticipate by the over-modest statements of those who are actually doing the work.—*Editor.*

Demonstrate Wool Dyeing by New Principle

A new low-temperature method of wool dyeing in which the goods are "bombarded" by the dye liquor was demonstrated at Bradford (England) Technical College, on Feb. 25. The process is based on the recent discovery, by technicians of the British Dyestuffs Corp., that by dyeing in a turbulent solution rapid penetration of the wool is obtained at temperatures as low as 40 to 60° C. Among the advantages cited for the new method are that it is less detrimental to the wool than is dyeing at the boil, permits savings in steam and time, allows use on felt and other thick fabrics of fast colors hitherto unsuitable because of their poor penetrating properties. Turbulence of the dye liquor is attained by bubbling compressed air into the bath under controlled conditions. The following brief description of the way in which the new technic was developed was supplied by one of our British correspondents:

Studies made by H. Jackson, chief colorist, and D. Carter assistant chief colorist, British Dyestuffs Corp., indicated that with some acid and chrome colors a faster rate of dyeing and a better penetration of wool felt were obtained by dyeing at 80° C. in a partial vacuum. Dr. H. A. Thomas, of the Dyehouse Laboratories, then discovered that by drawing air through the dye liquor, or by bubbling compressed air into the dyebath improved dyeing results were obtained at atmospheric pressure, at temperatures below the boil. Thick wool fabrics, including felt, were satisfactorily dyed at temperatures of 80°C.; and with some acid dyes, at 40°C. A comprehensive investigation showed that the improved rate of dyeing and penetration of fabrics was due to the turbulence in the dye liquor, which caused a bombardment of the wool by dye. This produces the effect of pumping the dye liquor into the wool fabric, and also a vibration of the individual wool fibers which can be said to "breathe in" the dye. This latter effect was observed with an individual wool fiber under the microscope.

A. G. Cuthbert-Smith, also of the Dyehouse Laboratories, demonstrated that this vibration effect was beneficial in dyeing, by connecting the wool fabric during dyeing to an electrical vibrating machine. The simplest application of the principle appears to be by a controlled air-bubbling.

L. P. Rendell has shown how the method can be advantageously applied in reel machines for the dyeing of wool piece goods. It is expected that the discovery of the importance of a turbulent effect in dyeing, will lead to the wide use of new mechanical devices for obtaining a controlled bombardment of the wool with dye liquor.

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Seek Salvation of Paterson Dye Industry

At a meeting of the Independent Dyers' Assn. held Feb. 26, in Paterson, N. J., plans were formulated for a campaign to bring about more equitable conditions in the silk and rayon dyeing and printing industry. In its attempt to obtain reduced rates for water and power in the Paterson area and to eliminate inequalities which are said to have crept into the administration of the silk dyeing code, the association has called for aid from municipal, state, and federal officials; the local chamber of commerce; and other organizations. It was emphasized at the meeting that Paterson dyers are facing stern competition from firms in New England and other localities which have decided advantages as regards wage rates and other factors. This competition, it was stated, threatens the stability and even the existence of the dyeing industry in the Paterson section.

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Warp Sizing Study At M. I. T.

A scientific study of textile warp sizing will be made at the Massachusetts Institute of Technology by the Institute's Division of Industrial Cooperation. The study, which was instituted by the U. S. Institute for Textile Research, Inc., and is endorsed by the Textile Foundation, will be in charge of the following committee: Wright Bolton, agent rayon division, Pacific Mills, Lawrence, Mass., chairman; Dr. J. B. Quig, Du Pont Rayon Co., New York, and Dr. H. A. Neville, physical chemist, Lehigh University. The Foundation has subscribed $5,000 to a fund of $10,000 that has been nearly completed by the Institute.

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Anti-Crease Linens

The Tootal Broadhurst Lee Co. anti-crease process has been applied successfully to linens, it is announced. This firm has placed on the market two kinds of linen fabrics that have been made crease-resistant—a dress-weight linen which is plain dyed or printed, and a heavier fabric, plain dyed and intended for suits, skirts, and coats. The printed fabric is available in a number of striped effects.

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New All-Bemberg Fabric Has Waterproof Finish

An all-Bemberg fabric with a high-luster glacé finish is being shown by Dunbar Gibson, Inc., 267 Fifth Ave., New York. This material, known as Glo-Tex, is available in plain colors and prints. The fabric is said to be waterproof, air-proof, crack-proof, and color fast. According to executives of the company, it may be cleaned with a damp cloth, thus eliminating need for dry-cleaning or laundering. It is stated also that it has a high tensile strength and is extremely durable. Apart from its suitability for draperies, upholstery, and other household decorating purposes, uses for which the new fabric is said to be particularly adapted include luggage and schoolbags, handbags, raincoats and hoods, aprons, lampshades, bridge-table covers, window shades, beach-wear, beach parasols, beach chairs, book bindings, and shoes.

New Dyes

General Dyestuff Corp. has announced a number of new products, among the more important of which are included Fastusol Yellow L5GA, a fast-to-light direct color said to give the greenest and brightest shade of any dye of this class; Celliton Discharge Blue 3K, the first blue dye of the Celliton range which is dischargeable to a white; Brilliant Indocyanine 7BF, a homogeneous acid color having good leveling properties and giving clear and brilliant shades; and Developer ORB for use in dyeing cellulose acetate. Other recent introductions are Fastusol Yellow L2KA, Fastusol Orange LGG, Fastusol Orange F3G, Diazo Fast Yellow 2GA, Palatine Fast Claret BN, Celliton Fast Brown 5K, Naphtol AS-L4G, Variame Blue Salts BA and KTA, and Katigen Brown 2 GN.

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Alkaline Detergent

Production of a new alkaline detergent, known as Metso 99, has been started recently by Philadelphia Quartz Co., Philadelphia. Chemically, Metso 99 is sodium sesquisilicate, an alkali having a pH of 11.6 at a concentration of 0.1%, as compared with a pH of 11.35 for sodium metasilicate and 11.9 for caustic soda. Among the advantages cited for this new detergent are its free solubility in water, its free rinsing properties, and the fact that it maintains its original pH until practically all of the alkali is neutralized.

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Association Notes

The 1934 officers of the National Textile Processors' Guild will serve again for 1935, all having been re-elected at the organization's annual meeting held in New York last month. The Guild also voted to create a credit reporting department and to assist members in stabilization, apart from the code. Harry E. Kenworthy, Cooper, Kenworthy & Co., Providence, R. I., is president.

C. S. Kauffman, director of sales promotion, Brown Co., Portland, Me., spoke on the development, characteristics, and applications of Solka, at the February meeting of the R. I. section A.A.T.C.C., held at Providence, R. I., Feb. 22.

Dr. Harry E. Smith, Clarion Chemical Corp., discussed pine oil and pine-oil penetrants as used in the textile industry, at the February meeting, New York section, A.A.T.C.C., held March 1, in Paterson N. J.

Winter meeting of Southeastern Section of American Association of Textile Chemists & Colorists was held Mar. 2 at Ralston Hotel, Columbus, Ga. Program included paper on following topics: "History of Indigo and its Dyeing Properties," by E. J. LeFort, Avondale Mills, Sylacauga, Ala.; "Stainless Steel in the Textile Industry," by J. E. Goodavage, Republic Steel Corp., Youngstown, Ohio; "Water For Textile Purposes," by George P. Feindel, Union Bleachery, Greenville, S. C.

Formation of a Canadian Association of Textile Colourists & Chemists was decided upon at a meeting held in Hamilton, Ontario, Feb. 7. The new association has as its object a combination of the principles of the American Association of Textile Chemists & Colorists and the British Society of Dyers & Colourists. A formal meeting, at which further steps toward organization were made, was held March 2. At this meeting Robert Bain, Mercury Mills, Ltd., was elected honorary president, and E. P. Carney, Bell Thread Co., Ltd., president.

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Industry Briefs

Stephen J. Casey, Providence, R. I., has been appointed receiver of the Finishing & Dyeing Textile Co., South Attleboro, Mass., a Rhode Island corporation. Mr. Casey's appointment followed a hearing in the Superior Court at which Joseph Rossi, vice-president of the company, asked that the company's affairs be wound up.

A net profit of $131,337 for the year ended Sept. 30, 1934, is reported by Lowell Bleachery, Inc., against $111,824 in the preceding year.

Plans for reorganization of the U. S. Finishing Co. and Queens Dyeing Co., a subsidiary, were filed Feb. 20, in the Federal Court at Providence, R. I. Under the reorganization plan, the firm will borrow $1,500,000 from the RFC; all debts of less than $500 will be paid at once; and all creditors above that figure will get 100% on basis of 20% cash and the remainder in a series of five equal notes, bearing interest at 3% and maturing annually over a 5-yr. period. Leonard S. Little, president of the company, signed the plan, which has the approval of bondholders of both the parent and the subsidiary firm.

Atlas Underwear Co., Piqua, Ohio, has developed a process for pre-shrinking wool underwear which cuts shrinkage to 3%. Details of the process have not been disclosed.

A flameproofing process which is applicable to fabrics of all fibers, as well as laminated cellophane, has been developed by New York Wetpruf Corp., according to A. Diaman, of that firm. The principle is explained as follows: the flameproofing places a substance in the textile; when heated, this forms a vitreous coating which emits a gas and thus prevents oxygen from reaching the fabric itself and igniting.

Hearing on the motions filed in the Mt. Hope Finishing Co. suit against officials of the U.T.W., arising out of the 1934 strike is scheduled for the session of the Superior Court opening March 18, in Fall River, Mass.

PROCESSING IN THIS ISSUE

	page
Whizzing Rayon—Control in Extracting Crepe Yarn	97
Should Pool Information on What Makes a Crepe	100
Layout Principles Aid to Bleach House Efficiency	102
Use of Standard Batches in Application of Latex	104
Blotches on Hosiery	120
Unevenness in Silk Yarn	120
Non-Corroding Rayon Dryer	125
Acid-Resisting Pump	125
Folding and Pressing Machine	125

Processing Plant News

Pepperell Mfg. Co., Lindale, Ga., has put into operation its new $250,000 dye plant containing mammoth Cocker indigo dyeing machine, 225 ft. long.

Blue Bird-La Salle Printing Co., Haledon, N. J., has been chartered to take over the Blue Bird Dyeing Co., and La Salle Printing & Dyeing Co., with mills on Henry St., and Morrisee Ave., respectively, heretofore closely identified. Fred A. Salkowitz, heretofore president of both companies, will continue to head new organization.

Textile Dyeing & Printing Co., Hawthorne, N. J., has concluded negotiations for purchase of property at Third and Hull Sts., Richmond, Va., formerly occupied by the Simmons Co., Kenosha, Wis. as a branch mattress factory. New owner will completely modernize at a cost over $250,000, with machinery.

Lyons Piece Dye Works, Paterson, N. J.,—Liquidation of this firm's equipment was started last month by the Consolidated Products Co., Inc., liquidators and machinery dealers, New York. Total value of the equipment is said to approximate $5,000,000, the printing plant alone representing a $500,000 investment. All machines are registered under the code.

Puritan Piece Dye Works, Paterson, N. J., has acquired the plant of the Franklin Piece Dye Works at 550 East 38th St., Paterson, paying $8,500 in cash for machinery and equipment and assuming liens of $45,000 against it. Franklin had filed a petition under Sect. 77B of the Bankruptcy act last November. The plant reopened early in March employing about 150. Officers of the Puritan were recently with Apex-Oriental Corp., a subsidiary of Duplan Silk Corp., and before that they were with the Apex Piece Dyeing Co.

B. & B. Piece Dye Works, Inc., Brooklyn, N. Y., has been organized with capital of $20,000, to operate a local dyeing and finishing plant. New company is headed by Peter Bonanno, 103 Eckford St., Brooklyn, and Hector Bonanno, 120-44 131st St., Ozone Park, L. I.

Process Yarns, Inc., Chattanooga, Tenn., has been chartered with a capital stock of $25,000 and 500 shares of no par value stock. Incorporators are L. M. Donovan, J. Chronsniak, J. A. Sherrill, F. M. Payne, and William G. Brown.

Powhatan Converting Works, Martinsville, Va., is reported to be planning a million dollar silk finishing plant.

United Piece Dye Works reports net loss of $1,870,517 for 1934 compared with net loss of $2,324,125 for 1933.

TEXTILE WORLD'S

Engineering Digest

THOSE engaged in engineering activities in textile mills are often in a rather unhappy situation, due to a lack of understanding on the part of executives. For example, a good economy job done by a power-plant engineer may get little recognition, because no one above him may really understand what has been done. On the other hand, an executive may expect his engineer to match a saving accomplished in another plant—without realizing that the latter was effected with the aid of an outside specialist.

No one expects a textile manufacturer to become an engineer over-night. However it is always possible to adopt a sympathetic attitude on problems beyond one's ken, and to try to understand the fundamental difficulties in the way.

Naturally these remarks do not apply to all executives. We know some who seem to take more interest in their power plant than they do in their manufacturing departments. The others will find it to their own advantage to acquire the sympathetic attitude mentioned above.

After all, this is the age-old question of the relationship between a "practical" manufacturer and his professional staffs, whether chemical, engineering, or what have you. But it is ever new, and offers a fertile field for mutual effort.—*Editor.*

There Can Be Too Much Oil

Reduction-gear units are widely used in conjunction with steam turbine drives for power-plant auxiliaries. Such units are commonly lubricated by a stream of oil directed on the point of contact of the gears, the oil being drawn by a pump from a supply in the base of the gear case and below the gears. In one instance, after putting in a supply of new oil, it was found that the entire unit, including the casing, was heating rapidly. Investigation showed that so much oil had been put in that the high-speed gears were dipping into the oil, picking it up as they revolved, and throwing it against the housing, thus generating much heat that was taken up by the oil and carried to all parts of the unit. Oil was drawn off until the level was below the gears and all heating stopped. C.A.

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Anti-Friction Bearings Pay

A New England cotton mill decided to find out what would be gained by replacing old bearings on spinning frames with anti-friction bearings.

A 15-year-old, 252-spindle, spinning frame, having six plain, cast-iron bearings, was selected for the test. Records were kept of power consumption, maintenance and lubricating costs, before and after application of anti-friction bearings. During a ten-hour period, power input ranged from 3½ kw. at no load to 5 kw. at full load with the old bearings. With anti-friction bearings, the corresponding power consumption ranged from 3 7/8 kw. to 4½ kw., or a saving of better than 9%. With the cost of power 1½c. per kw.-hr., and the mill operating two shifts, the annual saving in power for this one frame was $26.

With the old bearings, it was necessary to oil twice a day, at an annual cost of $23.76 for labor and $14.34 for lubricant. Anti-friction bearings require greasing only twice a year, so practically the entire lubricating cost was saved.

The total saving per spinning frame of this type was $64.10 per year and the initial cost of the anti-friction bearings under $50.

FRANCIS A. WESTBROOK, M.E.

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You Can Have Our Share

Apparently even "butter" can be a cause of friction. We don't know whether other textile mills have faced such a crisis, but from the Esso *Oilways* we cull the following:

It seems that a large mill was using White Parmo as twister-ring grease, but the consumption was so high that the management was about to discontinue its use because of the cost. Enter an engineer for Esso Marketeers, who stalked about the plant for half a day, convinced that something was wrong. At lunch time he found the workers filling the tops of their dinner pails with White Parmo, salting it, and using it for butter. Remedy: a violent cathartic mixed with the Parmo.

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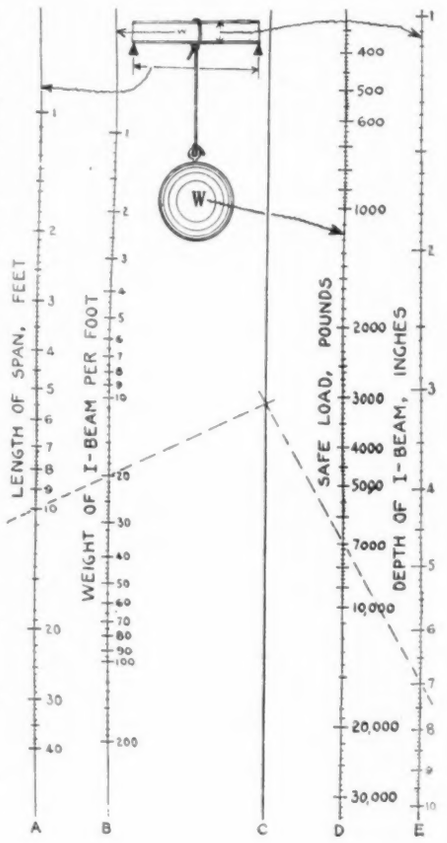
How Much Will An I-Beam Hold?

The nomograph shows how much any ordinary I-Beam will hold under the very *worst* condition, with the load concentrated in the middle of the span as shown by the sketch on the chart. The chart is based on concentrated loading for the sake of safety.

Let us suppose that a weight of 4,000 lb. must be supported. A 7-in. I-beam, weighing 240 lb., is available. It is 12 ft. long, and therefore weighs 20 lb. per foot. The minimum distance between supports that can be obtained for the lifting operation is 10 ft. Is the I-beam strong enough to lift the 4,000-lb. load?

The dotted lines drawn across the chart show how the problem is solved. Run a straight line through the 10-ft. mark in column *A* and the 20-lb. mark in column *B* and locate the intersection in column *C*. Then, from that intersection in column *C*, run over to the 7-in. mark in column *E*. The intersection through column *D* shows that the I-beam will support 7,000 lb. Since the load to be lifted is only 4,000 lb., the beam is amply strong. In fact, the reader can easily find, by applying the chart, that a 4-in. I-beam, all other conditions being the same, would safely support the load of 4,000 lb.

Similarly, it is easy to ascertain the maximum allowable span when the factors in columns *B*, *D* and *E* are known. Or the necessary weight per foot of I-beam may be determined when the factors in columns *A*, *D* and *E* are known. Lastly, the depth



of beam is determinable when the factors in columns *A*, *B* and *D* are known.

For loads that are "uniformly distributed" —not concentrated—the safe loads in column *D* may be multiplied by two. Thus, the above described beam will support a uniformly distributed load of 14,000 lb., or 1,400 lbs. per running foot.

S. F. W.

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How Much Do You Know About Power-Transmission Costs?

How much of your power-dollar goes to profitable production? What price do you pay per horsepower for motors of different sizes? How much horsepower do you need for a 20-hp. job? How much can you afford to pay for speed change? Are power losses greater with modern group drive? Are you getting the most out of your production equipment? Do your drives permit complete mobility at minimum cost? How much of a factor is lighting? The answers to these and other questions on power-transmission costs, as determined by a two-year study, are given in a booklet issued this month by Power Transmission Council, 370 Lexington Ave., New York. Plant engineers can find their "IQ's" by jotting down their own answers to these questions, and comparing them with those given in the booklet, which can be had for the asking from the Council.

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Index of Engineering Literature

Engineering Index, Inc., will appeal to the nation's industry operating in technical fields for a working capital fund of approximately $160,000 with which to continue the service and spread its use throughout the engineering offices, libraries and colleges of the country, over a five-year period, after which it is estimated it will be self-sustaining. This project has been announced by Collins P. Bliss, dean of the School of Engineering at New York University and president of the board of directors of the Index.

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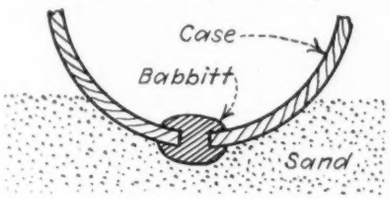
A Tip on Casting Repairs

The sketch shows a method used successfully for closing holes in castings by means of babbitt metal. It is quicker than any other method I have encountered.

Simply place the broken part in a box of sand, as illustrated. Push away enough of the sand from the edge of the hole so that the babbitt will securely clamp around both sides. You are then ready for the pouring of the babbitt.

Welding, of course, is better, but for temporary work this babbitt method serves the purpose very well. In fact, one babbitt repair job made more than 20 years ago is still good. If you have no babbitt, use lead or similar metal having a low melting point. S. F. W.



ENGINEERING IN THIS ISSUE

	page
Layout Principles Aid to Bleach House Efficiency	102
Engineer's Bulletin Reminds Overseers of Economies	106
D.C. Motor for A.C. Line	124
Spindle Oils	124
Small Electric Brakes	125
Acid Resisting Pump	125
Bronze Air Nozzles	125

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Guide to Southern Textile Show

(Continued from page 82)

shuttles with automatic, expanding, ear-clip catch. Rep.: W. L. Watson, C. E. Watson, H. J. Watson, G. F. Bahan, P. L. Spencer.

Wellington Machine Co., Wellington, Ohio. Booth 120A. Rubber-tired, cotton-truck wheels and castors. Rep.: C. A. Glass, G. H. Woolley, R. B. Dorman, S. R. Parker.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Booth 465. Electrical apparatus. Rep.: T. Fuller, N. G. Symonds, J. Gezler, Jr., J. C. Boesch, M. A. Land, C. L. Speake, J. H. Reeves, Jr., B. L. Cathey, E. S. Lammers, J. W. Brooks.

Westinghouse Electric Supply Co., Charlotte, N. C. Booth 486. Industrial water coolers. Rep.: C. W. Dustin, W. A. Emerson, D. N. Asbury, A. G. Cruciger.

G. A. White & Co., Charlotte, N. C. Booth 113A. Humidifying equipment and humidity controls; products of Jackson Moistening Co. and International Moistening Co. Rep.: G. A. White, J. W. Jackson, J. Nash.

Whitin Machine Works, Whitinsville, Mass. Booths 237, 238. Preparatory and spinning machinery. Featuring samples of repair work done by the Charlotte Sales & Repair Depot, and showing details of repair work in revamping rolls, spindles, flyers, top combs, tin cylinders, card screens, ring holders, etc. Rep.: Messrs. Dalton, Porcher, Wingo, Bentley, Thomas, Johnson, Bozeman, and Lyerly.

Whitinsville Spinning Ring Co., Whitinsville, Mass. Booth 203. Spinning and twisting rings. Featuring Eadie self-lubricating rings with tools for installation, and expanded and reducing rings for use where yarn numbers have been changed or larger packages desired. Rep.: W. P. Dutemple.

John P. Nissen, Jr., Co., Philadelphia. Booth 225C.

E. L. Bruce Co. (Terminix Division), Memphis, Tenn. Booth 483A.

American Pulley Co., Philadelphia.

Engineering Trade News

DeVilbiss Co., Toledo, has elected W. F. Gradolph as vice-president in charge of sales.

D. W. Haering & Co., Inc., water consultants. Chicago, announce the removal of their Detroit office to the Fisher Building, the appointment of Franklin W. Murray as district manager, and the appointment of Howard B. Graves as district manager in charge of the St. Louis office.

Link-Belt Co., Chicago, has announced the following promotions: William L. Hartley, heretofore manager of Detroit office, assumes position of manager of foundry equipment sales, with headquarters in Chicago; Harold L. Hoefman, heretofore manager of the company's Indianapolis branch, succeeds Mr. Hartley as manager of Detroit office; Richard B. Holmes, of the St. Louis office, succeeds Mr. Hoefman as manager of Indianapolis branch sales; Carl A. Blomquist, of Chicago, succeeds Mr. Holmes at St. Louis, where he will assist Howard L. Purdon, manager.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has announced the removal of its Pittsburgh office to 2037 Koppers Building.

Reading Iron Co., Reading, Pa., has formed a commercial research department to give disinterested advice about pipe problems to those who specify or buy pipe. This department will be composed of skilled technicians whose conclusions will be based solely on the conditions of service.

Precision Gear & Machine Co., Charlotte, N. C., has appointed B. G. Woodham traveling representative. Mr. Woodham was formerly assistant superintendent of Sanford (N. C.) Cotton Mills.

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Engineering Mill News

West Point (Ga.) **Mfg. Co.,** has awarded general contract to Batson-Cook Co., West Point, for new one-story boiler plant, 20x42 ft., at **Fairfax** (Ala.) **Mills,** on which work will begin at once. Cost over $20,000, with equipment.

Clark Thread Co., Newark, N. J., has contracted with the Public Service Electric & Gas Co., for central station service at local mill on Clark St., and will discontinue operation of company electric generating plant, heretofore used for such purpose. A new power substation will be installed at mill and other facilities provided for new power supply.

ADVERTISING PAGES REMOVED

QUOTATIONS

At close of business, March 1, 1935

Prices cover average qualities unless otherwise stated

Cotton Goods

	Mar. 1	Feb. 1	Mar. 1
PRINT CLOTHS			
27 -in., 64x60, 7.60	4¾	4¾	5
38½-in., 64x60, 5.35	6¼	6½	7½
39 -in., 68x72, 4.75	7⅛	7⅜	8
39 -in., 72x76, 4.25	8⅛	8¼	9¼
39 -in., 80x80, 4.00	8¾	9	10
BROWN SHEETINGS			
36-in., 56x60, 4.00	7½	7⅜	8¼
36-in., 48x48, 5.00	6½	6¼	6¾
37-in., 48x48, 4.00	7½	7⅜	7½
MISCELLANEOUS			
Drills, 37-in., 3 yd	9¼	9⅛	10
Denims, 2.20	14½	15	16
Tickings, 8 oz.	18½	19	18½
Standard prints	7¼	7⅛	7¼

*Tax included.

Cotton Waste

Peeler comber	14.25
Peeler strip	14.50
White spooler (single)	7.00
Linters (Mill Run Average)	5.50

Cotton Prices

Spot Cotton at:	Mar. 1	Feb. 1	For Month High	For Month Low	1934 Mar. 1
New York	12.60	12.55	12.80	12.45	12.20
New Orleans	12.70	12.53	12.79	12.43	11.97
Liverpool	7.09	7.07	7.16	7.01	6.52

FLUCTUATIONS OF FUTURES

	Closed Mar. 1	For Month High	For Month Low	Closed Feb. 1	Net Change
Mar.	12.37	12.58	12.20	12.31	+0.06
April	12.42	12.61	....	12.34	+0.08
May	12.48	12.66	12.26	12.38	+0.10
June	12.50	12.68	....	12.38	+0.12
July	12.54	12.71	12.26	12.39	+0.15
Oct.	12.48	12.58	12.17	12.31	+0.17
Nov.	12.51	12.61	....	12.34	+0.17
Dec.	12.55	12.65	12.22	12.37	+0.18
Jan.	12.59	12.67	12.25	12.38	+0.21

AVERAGE PRICE JUNE-JULY SHIPMENT HARD WESTERN COTTON

	F.o.b. New England Middling	St. Middling
1¼-in.	14.98	15.48
1 5/16-in.	16.23	17.48
1½-in.	18.98	20.98

Based on May 12, 48.

FOREIGN COTTONS

Alexandria Exchange, Mar. 1	
March, Sak	15.54
April Uppers	13.45
Shipment c.i.f. Boston (Tariff not included)	
Medium Sak	25.50
Medium Uppers	24.00
(By Anderson, Clayton & Co.)	
India Rough, Calcutta Camilla	9.50
China Tientsin No. 1	15.75

Quotations on cotton cloth and cotton yarn as given on this page include the cotton processing tax. Cotton waste prices also include the processing tax but of course the prices on various raw cottons do not include it.

Cotton Yarn (Nominal)

(Tax Added)

CARDED (Average Quality)

Double Carded 2c—4c., higher according to quality

SINGLE SKEINS OF TUBES (Warp Twist)

4s to 8s	$0.27	20s	$0.30
10s	.27½	24s	.32
12s	.28	26s	.33
16s	.29	30s	.35

TWO-PLY SKEINS AND TUBES

8s-2	$0.27½	20s-2	$0.30½
10s-2	.28	24s-2	.32½
14s-2	.29	30s-2	.35½
16s-2	.29½	40s-2	.41½

SINGLE WARPS

10s	$0.28	20s	$0.30½
14s	.29	24s	.32½
16s	.29½	30s	.36½

TWO-PLY WARPS

8s-2	$0.28	20s-2	$0.31
10s-2	.28½	24s-2	.33
14s-2	.29½	30s-2	.36
16s-2	.30	40s-2 ordin.	.42

HOSIERY CONES (Frame Spun)

8s	$0.27	18s	$0.29½
10s	.27½	20s	.30½
12s	.28	22s	.31½
14s	.28½	24s	.32½
16s	.29	26s	.33½

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.36	50s-2	$0.50
30s-2	.41	60s-2	.56½
40s-2	.46	80s-2	.77½

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.37½	50s-2	$0.50½
30s-2	.41½	60s-2	.57½
36s-2	.44½	70s-2	.67½
40s-2	.46½	80s-2	.78½

SINGLES

14s	$0.34	38s	$0.45½
20s	.35½	40s	.46½
28s	.38½	50s	.48½
30s	.39½	60s	.55½

MERCERIZED CONES—(Combed, Ungassed)

30s-2	$0.52	60s-2	$0.70
40s-2	.57	80s-2	.96

Raw Silk

Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Special Grand, 85%	1.67½	1.45½	1.39½
Grand XX, 83%	1.53½	1.43½	1.37½
Special Crack, 81%	1.47½	1.41½	1.35½
Crack XX, 78%	1.42½	1.39½	1.33½
Extra, Extra, 73%	1.40½	1.38	1.32
Best Extra, 68%	1.38½	.....	.....

RAW SILK EXCHANGE

	Mar. 1	Feb. 1	For Month High	For Month Low	Net Change
March	1.32½	1.34	1.42	1.33	—.01½
April	1.33	1.34	1.42	1.33	—.01
May	1.33	1.34	1.42½	1.33	—.01
June	1.33	1.35½	1.43	1.33	—.01½
July	1.33	1.34	1.43	1.33½	—.01
Aug.	1.32½	1.35	1.42½	1.33½	—.02½
Sept.	1.32½	1.34	1.42½	1.33	—.01½

Silk Yarns

Hosiery tram 5thd, Japan, 85%	$2.30
Hosiery tram, 5thd. crack XX, 78%	2.05
60/2 spun silk	2.75

RAYON WASTE

Thread (for garnetting)	$0.15

Wool

OHIO, PENNSYLVANIA, ETC. (GREASE)

Fine delne	$0.26 –$0.27	⅜ blood	$0.26 –$0.27
Fine clthg	.20 – .21	¼ blood	.24 – .25
½ blood	.27 – .28		

TEXAS AND CALIFORNIA (CLEAN)

Texas, 12 months	$0.61 –$0.63
California, Northern	.56 – .58

MONTANA, IDAHO, WYOMING (CLEAN)

Staple fine	$0.66 –$0.68
Staple ½ bld.	.63 – .65
Fine and fine medium (original bag)	.62 – .64
⅜ blood	.55 – .57
¼ blood	.50 – .52

EASTERN SCOURED PULLINGS

A.A	$0.67 –$0.68	B-Super.	$0.50 –$0.55
A-Super	.58 – .60	C-Super	.47 – .49

CARPET WOOL (Nominal)

Aleppo (clean)	$0.17 –$0.20
Sining	.10 – .14
China filling (clean)	.9 – .14

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.89 –$0.90
Half-blood (60-62s)	.83 – .85
Aver. ⅜ blood (56s)	.72 – .74
¼ blood (50s)	.60 – .62

NEW YORK TOP FUTURES

	Closed Mar. 1	For Month High	For Month Low	Closed Feb. 1
March	74.9	75.0	72.2	72.9
April	73.1	74.1	72.2	72.7
May	73.2	74.1	73.0	72.7
June	73.3	74.9	72.5	72.7
July	74.0	75.8	72.5	72.7

TOPS—BRADFORD ENG. March 1

Fine (64s)	23½d	⅜ bld. (56s)	17½d
½ bld. (60s)	22½d	¼ bld. (50s)	13¼d

NOILS—BOSTON

Fine	$0.51 –$0.53	⅜ bld.	$0.43 –$0.45
Half bld.	.46 – .48	¼ bld.	.38 – .42

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 44s	$0.92½–$0.95	2-36s 58s	$1.27½–$1.30
2-30s 46s	1.00 – 1.05	2-40s 60s	1.32½– 1.35
2-30s mixes	1.32½– 1.37½	2-50s 64s	1.45 – 1.50

ENGLISH SYSTEM KNITTING

2-20s 44s	$0.87½–$0.90	2-20s 60s	$1.12½– 1.15
2-20s 50s	.92½– .95	2-20s 64s	1.17½– 1.20

FRENCH SYSTEM

1-26s 64s warp	$1.12½–$1.17½	2-40s 64s Zephyrs	$1.35 –$1.40
1-30s 64s warp	1.32½– 1.37½	2-50s 66s	1.52½– 1.57½

Domestic Rayon (Skeins)

VISCOSE PROCESS

Denier	Filament	Price	Denier	Filament	Price
50	14	$1.17	150	24–40	$0.60
75	30	.92	150	60	.62
100	40	.80	300	44	.49
125	36	.67			

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.20	100	$0.85
55–65	1.15	120–125	.73 – .77
75	1.00	150	.67 – .70

CUPRAMMONIUM PROCESS (TWISTED)

Denier	Filament	Price	Denier	Filament	Price
30	24	$1.50	100	75	$0.80–$0.90
75	60	.95–$1.05	150	112	.65– .75